American Journal of Surgery and Gynecology.

VOLUME XV. ST. LOUIS, MO., NOVEMBER, 1901. NUMBER 4

WOMAN'S HOSPITAL REPORTS.

BY EMORY LANPHEAR, M. D., PH. D., ST. LOUIS, MO.
Chief Surgeon to the Woman's Hospital of the State of Missouri; Gynecologist to St. Joseph's Sanatorium.

Of interesting cases admitted to the Woman's Hospital recently, the following are regarded worthy of record:

GANGRENOUS APPENDICITIS IN A HERNIAL SAC IN THE MEDIAN LINE.

Mrs. E. J. B., patient of Dr. W. M. Dunn, of Clifton Heights, was admitted September 27, 1901, with the following history:

Age 63 years, mother of five children, always well since menopause at 48, and extremely heavy, with pendulous abdomen. About three years ago a mass slowly formed half way between the umbilicus and os pubis—regarded as a "fatty tumor" of the abdominal wall, and so pronounced by a surgeon of St. Louis, who made arrangements for operation. Just before the time set for removal of the tumor (which was now the size of a large cocoanut), she was seized with pain and tenderness in the "tumor," accompanied by fever and anorexia. After some days in bed without attention, her condition became so alarming that Dr. Dunn was called. He found a huge abscess, tender, red, fluctuating and apparently about to burst. This he incised, evacuating more than a pint of pus, which has a strongly fecal odor. That evening the woman was sent to hospital and prepared for operation. On making a free incision into the abscess cavity a large mass of infected omentum was found, sloughing, with strong adhesions around the hernial opening. When this was trimmed away it was found that the ventral hernia of the mid-line was not a simple epiplocele, but also contained a part of the cecum and the vermiform appendix! The latter had been affected by inflammation, had become necrotic, and a fecal abscess formed—just as so often occurs inside the abdomen. Fortunately the adhesions around the neck of the sac had been sufficiently strong to prevent entrance of the pus into the abdominal cavity.

The appendix was amputated, and all the walls of the abscess carefully trimmed away, but no attempt made to liberate the cecum from its attachments, as it was concluded there would be no serious narrowing of the gut, no matter how strong the cicatricial contraction to follow.

Relief was immediate, and permanent. The wound was simply packt with gauze and allowed to heal by granulation. Recovery has been perfect, and the patient is in good health—simply compelled to wear a snugly-fitting abdominal supporter.

DEATH FROM ACUTE GONORRHEA.

Mrs. L., patient of Dr. Geo. Howard Thompson was admitted to the Woman's Hospital affected by acute pelvic inflammation. She was 23 years of age, never ill before, tho not of robust build. Four weeks before admission she contracted gonorrhea, which ran an unusually severe course, the vagina, cervix and uterus becoming consecutively affected within a period of three weeks; then pelvic peritonitis developt, of remarkably virulent type, with formation of perimetritic pelvic abscess, as well as suppurative salpingitis.

Examination at time of admission showed extreme emaciation, acute sepsis, pelvic peritonitis, abscess of left tube and one in the cellular tissue to left of uterus, which was itself enlarged, tender and suspiciously soft.

On account of the desperate condition of the patient it was decided to merely open and drain the abscesses and leave radical measures until later. So, under general anesthesia of mild degree the cul-de-sac of Douglass was incised and the abscesses opened with the fingers. But local necrosis had gone on to such an extent that not only did the affected tube peel out and drop into the vagina by even the almost gentle manipulation, but the upper half of the uterus—rotten, stinking, pus-infiltrated—came away in the same manner, and without hemorrhage.

The cavity was hastily wiped out and loosely packt with gauze, and patient returned to bed as soon as possible. Altho she was not under the influence of the anesthetic more than fifteen minutes, and did not lose more than two ounces of blood, she never rallied from the operation, but died next day in spite of the most vigorous treatment, including intra-venous saline injections, strychnine, whiskey, etc.

Here was a case in which effect was directly traceable to cause; the gonococcus set up the inflammation, a streptococcus infection became engrafted upon it with the immediate sequence of acute pelvic peritonitis, acute abscess, acute general sepsis and death in spite of operation at earliest possible moment. Fortunate, indeed, is it that the progress of gonorrheal inflammation is seldom of this violent type; yet such cases are probably of more frequent occurrence than we are wont to believe, the cause being ascribed to a miscarriage which really never happened.

PLEURAL EFFUSION.*

BY JAMES S. BROWN, M. D., MANCHESTER, N. H.
Surgeon to Sacred Heart Hospital.

In this paper I do not wish to take up the subject of purulent accumulations—but rather the method of preventing them by calling attention to some minutiae of the operation of aspiration of the thorax, points which render it one of the safest of procedures; nor shall I mention those serous thoracic effusions, the result of cardiac or renal failure. Besides these two cases a certain number of cases are due to tuberculosis of the lung or pleura (or both), a few to malignant growths, still others to traumatism; quite a large number follow acute infectious diseases: influenza, typhoid, etc., but a majority can be traced to exposure and cold, tho probably also tubercular if the truth were known. The number of pleural effusions varies to a great degree from year to year, and during the past two years in Manchester, I am told by old physicians, there has been an unprecedented number. I have sometimes thought that the present large number of effusions we see is due in some measure to the prevalence of influenza.

DIAGNOSIS.

The diagnosis of pleural effusion is usually very easy, but may be quite difficult. It is surprising, however, to see in how many cases, easy of diagnosis, the effusion is overlookt, usually by reason of a faulty examination. I remember one case sent for operation for appendicitis, which proved to be a right-sided pleural effusion, displacing the liver downward: After aspiration of forty-four ounces from the pleural cavity, the man was almost immediately cured.

The diagnosis of pleural effusion must be made from physical signs alone, for the subjective symptoms are of value only in causing one to have a suspicion of effusion.

The important physical signs of this condition are the following: First, the intercostal spaces are filled out and may bulge, and the affected side is relatively immovable; there is dulness or flatness, and increast resistance on percussion. This sense of solidity or resistance to the percussing finger is a sign that is not given the value it deserves in diagnosis, for by it the practist diagnostication can differentiate at once the dulness of pleural effusion from the dulness of extensive consolidation of the lower lobes of the lung.

The diminution of the tactile fremitus, elicited by placing the palmar surface of the hand upon the back of the patient while he counts out loud, is one of the most valuable signs of effusion of the pleura, and a sign to which too little weight is given in the diagnosis. It is stated in many text-books that the tactile fremitus is abolisht over the effusion, but in a large effusion with high tension of the contained liquid it will still be present, tho diminisht.

There will usually be absence of breath-sounds, and diminution of the vocal resonance over the effusion, but frequently respiration will have a distantly bronchial sound immediately above the effusion, due to condensation of the lung by the presence of the liquid below it.

The last, but certainly not the least of the important signs, is the displacement of the apex-beat of the heart toward the unaffected side. This sign, so frequently passt by in a hurried examination, is of the utmost value because of the ease with which it may be elicted. The displacement may be extreme. I have seen it under the right nipple, and in the left axilla in another case.

It is important to remember that one or two of even these

*Abstract of paper read before the New Hampshire Medical Society.

most positive signs may be absent. The diminution of tactile fremitus is of more value in men than women; in the lean than the fat.

Movable dulness is pathognomic if elicited; but it is difficult to make out clearly, and often cannot be detected at all. Increase of size of affected side is of little value—it may be congenital.

In case of doubt—after exhaustion of all other means of diagnosis—the aspirating needle may be introduced; an operation which may be made almost painlessly and without danger if done properly. The character of the fluid withdrawn is often indicative of the cause of effusion: bloody effusion means (1) malignant disease, (2) tuberculosis or (3) sepsis.

Encapsulated effusion is to be positively diagnosed only by the aspirator.

The differential diagnosis between pleural effusion and croupous pneumonia is a question very frequently askt in examinations of all sorts. It is never difficult in my experience. The physical signs are different with the exception of dulness, and even the dulness has a different character in effusion. The most important diagnostic difference is probably tactile fremitus, diminisht in the one and increast in the other. With regard to temperature, it is not so important a differential point as usually given, for I have seen occasionally pleurisies with a temperature of 104 degrees and pneumonias with temperature not higher than 102 degrees. Pneumonia usually begins with a well markt chill, and pleurisy with only a feeling of chilliness. Expectoration in pleurisy is sometimes bloody from accompanying bronchitis.

The hardest differential diagnosis which I have been called to make is that between massive tubercular consolidation of the whole lower part of a lung, or even of a whole lung, and pleural effusion. Sometimes this may have a relatively acute onset, and where the air cannot get into the consolidated part at all the signs are much like those of effusion. I have seen two cases of this kind in which an absolute diagnosis was only made by the aspirator.

We must also remember that a pleural effusion on the right side may displace the liver downward, perhaps two or three inches, causing pain in the abdomen and giving the case the appearance of an abdominal lesion.

Extensive pericardial effusion usually gives markt flatness in the left axilla, and some cases look like a pleurisy encapsulated there. In these cases normal resonance will be retained in the back. The thing to do, if in doubt here, is to aspirate the pleura first and the pericardium later, if it be deemed necessary.

Recurrent effusion usually means tuberculosis. These recurrent effusions may be as much as a year apart and may be on the same or different sides.

INDICATIONS FOR ASPIRATION.

The most urgent reason for early aspiration is to prevent the change of a sero-fibrinous exudate into pus; the usual effusion is already on the border-line of pus—containing many dead leucocytes and debris, needing only the addition of some pus-forming micro-organism to effect the change. A point of interest (not mentioned by text-books), is that, if the number of red blood-corpuscles in the effusion is below 3,000 per cubic millimeter the effusion rarely becomes purulent; but if from 3,000 to 5,000, it will do so if given half a chance.

The indications for aspiration may be relative or absolute—i. e., it may be an operation of necessity or of choice. Pepper thus formulates the indications for immediate aspiration: first, pleura full to the clavicle; second, fluid in both pleural cavities; third, the occurrence of great dyspnea or of cyanosis; fourth, pleural effusion which has resisted medicinal treatment for three or four weeks. Dieulafoy, the greatest authority in the world on this subject, goes farther, stating that dyspnea and cyanosis are deceptive signs, and that the absolute indication for aspiration at once is the presence of fluid to the amount of 1,800 grammes, as a less amount than this has never caused sudden death.

The exact estimation of the amount is somewhat difficult, but he gives the following rules: When inspiration is not perceptible to auscultation but expiration remains as a faint souffle, the quantity is below the danger point, but if the respiratory sounds are not perceptible at all, or if they have a cavernous or amphoric sound, the amount of the fluid is about 1,800 grammes. And also, when in a left-sided effusion the apex-beat of the heart is displaced behind the sternum or to the right of the sternum, and in a right-sided effusion if the liver is palpably displaced downward, the effusion should be aspirated at once.

In addition to these absolute indications for immediate aspiration it is, in my opinion, the procedure of choice in all effusions that are stationary, and in which the febrile reaction has largely passt away, without regard to their amount. In this connection it may be well to state that pleural effusions vary very much in different localities. For instance, I am told that in Canada it is a very common but not very severe affection with markt tendency to spontaneous cure, and in my own experience in Pennsylvania it is much less common than here. In New Hampshire it is very common and does not yield well to medicinal treatment, or to expectancy, save in exceptional instances.

TECHNIC OF ASPIRATION.

The technic of aspiration is as follows: The aspirator is put together and tested in the office by allowing a little carbolized solution to flow thru it. There is nothing so mortifying as to insert the needle in a patient and find that there is some fault with the apparatus. Next, one should select needle No. 2, or No. 3, with its wire inside of it; wrap it in gauze and boil it ten minutes; take it out wrapt in the gauze and wrap it in a clean piece of cloth. At the patient's house, after the operator has cleansed his hands, the gauze is to be opened and the wire withdrawn from the needle, and the apparatus put together and its permeability again tested by drawing a little carbolic solution thru the needle, which is left in the remaining solution until needed. The patient sits upon the bed with his arms extended in front and supported by the assistant or friend. It is well to give him an ounce of whiskey and have a hypodermic loaded with 1-20 grain of strychnine. The distal stop-cock is closed and a vacuum formed in the aspirator; then the other stop-cock is also closed. The skin of the patient at the point selected is to be sterilized by vigorous scrubbing with alcohol and 1:20 carbolic solution, and the operator's hands by soap and water and alcohol. A point is selected in the seventh or eighth interspace in the back in the line of the prolongation of the angle of the scapula. The skin is to be anesthetized by a spray of ethyl chloride until well whitened and frozen, and the needle pusht steadily in close to the uppper border of the rib. The time when it has entered the pleural cavity may be told by noticing the disappearance of the resistance of the tissues. The stop-cock on the side toward the needle is then opened and the liquid is allowed to run slowly. The needle may now be turned parallel to the ribs to keep its point away from the lung. When one quart has been drawn away, the stop-cock attacht to the needle is to be closed and the needle slowly withdrawn. No dressing is needed except a piece of plaster, or some collodion may be used if desired.

If the remainder of the effusion is not entirely or largely absorbed the next day, or the day after, the operation is to be repeated.

The reason why only a quart is withdrawn at one sitting is that it almost entirely obviates the only two dangers that this operation has when conducted in the way I have described: these are syncope and albuminous expectoration. The operation is so nearly painless that patients never dread the second aspiration. The back is selected as the point of election because it is equally or more acccessible than any other place, and because heart, spleen, and liver are further away. If at any time in the operation unpleasant symptoms arise, such as faintness, great weakness and prolonged cough, etc., the needle should be immediately withdrawn and the operation proceeded with the next day.

By observing all these precautions the operation becomes almost entirely painless, and without danger. Wound of an intercostal artery or of the lung, sepsis, entrance of air into the pleura, etc., are to be disregarded, as they do not occur. The two dangers which may occur are syncope and albuminous expectoration. They are usually due to removal of too much fluid or to complications such as pericardial effusion.

I have had but one complication of aspiration of the pleura, viz., albuminous expectoration in one case, with recovery. The operation in any case is a very safe one, and with observance of the above precautions the mortality should not be over one in a thousand in uncomplicated cases, and I am positive that many lives, to say nothing of prolonged sickness, of tuberculosis, or of empyema, etc., will be saved by early resort to aspiration.

Dr. John L. Jelks, of Memphis, Tenn., (Memphis Medical Monthly for April), reports a case which shows some of the fearful effects of the injection of carbolic acid in the treatment of hemorrhoids. The patient had a small hemorrhoidal tumor injected and a few days thereafter the pain (which had been constant since the injection was made) increast, and a few days later she began to discharge pus from the bowels. This sloughing process continued until the whole perineum entirely slought away. The engorged and inflamed bowel protruded in a gangrenous mass the size of a cocoanut. The woman will die of sepsis in spite of all that can be done. He concludes that carbolic acid injections do not cure hemorrhoids, but, on the contrary, are fraught with great danger and should, in the future, be stampt with the disapproval of the entire profession.

TRANSPLANTATION OF URETER FOR CURE OF URETERO-VAGINAL FISTULA.*

BY A. LAPTHORN SMITH, M. D., M. R. C. S., MONTREAL, QUEBEC.
Professor of Clinical Gynecology in Bishop's College; Professor of Surgical Diseases of Women in University of Vermont.

Mrs. J. B., of Vancouver, B. C., age 34, was confined with forceps at 32; during delivery ureter was torn in two and ureterovaginal fistula formed. Two plastic vaginal operations made at St. Bartholomew's Hospital, London, failed to cure. On attempting to examine her vagina, it was found impossible to do so without an anesthetic, owing to the extreme sensitiveness of both vulva and vagina, both of which were covered with excoriations and ulcers. Steps were at once taken to render the urine less irritating and as soon as a bed was vacant she was admitted to the Western General Hospital.

Another vaginal operation was performed, but in spite of the greatest care in dissecting out the fistulous tract, careful suturing and skillful nursing, the tissues were so friable that everything pulled apart and the flow of urine into the vagina was worse than ever.

On the 17th of August, 1901, assisted by Dr. England, and Dr. Gillespie, I made the following operation: The abdomen was incised in the midddle line from the pubes to the umbilicus down to but not thru the peritoneum. The latter was then easily pusht off the abdominal wall on the right side and not only the bladder but also the large vessels of the pelvis were exposed to view, my intention being to find the ureter and to cut it off close to the fistula and to transplant it into the bladder higher up, without opening the peritoneal cavity at all. Altho I nearly succeeded in doing so, and would have no difficulty in doing so should I ever have a similar case, yet on this occasion several circumstances threw me off the track and I was eventually obliged to follow the same plan as I had seen Saenger follow in a similar case in Leipsic when I was there three years ago, namely to open the peritoneum running over the large vessels at the brim of the pelvis and to feel for the artery, see the vein and pick up the third tube which was the ureter. One of the circumstances referred to was the vomiting which started violently the moment the anesthetiser ceased to "pour on" the anesthetic, (and this he stopt doing because she was so weak); and another was the unusual distention of the stomach and colon with gas, altho the bowels had been well moved and the small intestines were collapst; a third circumstance was retroversion of the uterus, owing to which I found two round tubes dipping down into the pelvis—one being later found to be the ovarian vein, and the other the round ligament. I mention these little difficulties so as to help any of my readers who may have to perform this operation. Had it not been for the vomiting and the distension of the large bowel, the intestines would have been easily pusht into the upper abdomen as the patient was in the highest Trendelenburg posture, without which, indeed, the operation for me would have been well nigh impossible. Another cause of the difficulty in finding the ureter was in not first passing the probe into it from the vagina before the operation, for when I askt one of my assistants to do this during the operation he was unable to find it. When at last I was reluctantly compelled to open the peritoneal cavity I had only to make a little slit in the peritoneum lining the wall of the pelvis, in the line of where I knew the ureter should be, when I quickly came upon it and pickt it up.

About one inch of the lower end of it was imbedded in cicatrical tissue and of course this much of it had to be sacrificed; a silk ligature was passt around it while my assistant pulled it taut and tightly tied and cut it off. The ureter was then severed a little above the ligature and covered with a gauze sponge as urine at once came from it. As most of the deaths or failures to unite have been due to the septic condition of the urine I had taken the precaution to administer urotropine for a week before so that I was not afraid of a drop or two escaping; and as stricture of the ureter is another cause of failure I did not wish to bruise it with a forceps. We all thought it much thicker than we had ever seen it before; perhaps the obstruction at the site of the injury had caused it to hypertrophy as it is a muscular tube capable of peristalsis.

The end of the ureter was split open to a distance of a third of an inch so as to avoid subsequent strictures after it was transplanted, an accident which has marred the succecss of more than one case where this was not done.

A slit was then made obliquely into the right upper corner of the bladder and the ureter stitcht into it, the mucous membrane of the ureter to the mucous membrane of the bladder with very fine chromicised catgut, and the fibrous coat of the ureter to the muscular wall of the bladder with six fine silk stitches. In doing this Van Hook's method was employed.

The bladder was then distended with a pint of weak methyl blue solution and to my delight not a drop leakt thru the point of transplantation. The two inch cut in the peritoneum was closed with fine catgut, as was also the opening in the parietal peritoneum. In case that the transplanted ureter should fail to adhere, a drainage tube was passt down from the end of the incision in the abdomen to a little below the opening in the bladder, and a piece of iodoform gauze down to the lowest point between the peritoneum and the pelvic fascia. The abdomen was closed with silk worm gut and the patient went off the table in fair condition. Apart from the vomiting which lasted three days, she has made an excellent recovery.

*Abstract of paper read at the meeting of the Canada Medical Association, 1901.

A RESUME OF THE LATEST LITERATURE ON TUBERCULOSIS OF THE PERITONEUM.*

BY WALLACE NEFF, M. D., WASHINGTON, D. C.

There is no more remarkable fact known to surgeons than that a simple abdominal section will cure a large proportion of cases of tubercular peritonitis. The literature of the suoject is comparatively recent, the earliest English monograph being by Van de Warker of Syracuse in 1887. In 1890 Koenig gave an analayzed tabulation of 131 cases. About the same time Osler gave the subject special attention, and to him seems to be due the credit of making the first histological study of the process of healing after abdominal incision. He found fibrous tissue, holding in its meshes a few giant cells, and isolated tubercle bacilli. In November, 1890, Parker Syms of New York read a paper before the New York Surgical Society on "The Influence of Laparotomy upon Tuberculosis of the Peritoneum."

In 1898 Parker Syms (Medical Record, April 2, 1898), and B. B. Davis of Omaha (J. Am. M. Ass., 1898, xxxi), wrote excellent articles on this subject, and to them the writer is largely indebted for the information contained in this paper. The literature prior to this time consisted of reports of cases, in which laparotomy had been performed because of errors in diagnosis, and in which cure had resulted by accident. Now the literature is full of reports of cases in which the operation has been made as a recognized method of treatment, when a diagnosis has been already made.

There are many theories as to why an abdominal section should cure such an extensive and fatal disease. 1. It is claimed to be due to chemical disinfectants; 2. To drainage; 3. Exposure of the abdominal cavity to air and sunlight. 4. To the altered blood circulation, due to the removal of ascitic fluid; 5. By the introduction of bacteria a tox-albumen is produced which is fatal to the tubercle bacilli; 6. A traumatism is produced by the opening of the abdomen and handling of the organs, which establishes a fibrinous peritonitis, resulting in encapsulation of the tubercle bacilli, and their arrest; 7. Cure is due to the advent of leucocytes, and is the result of phagocytosis; 8. That a physiological change in the peritoneum is produced by a mere opening into the abdominal cavity, which makes it cease to be a proper soil for the culture of the tubercle bacilli.

No one of these theories has been positively demonstrated to be true, and some of them can be summarily disposed of.

Cure does not depend upon the use of antiseptics, as in a long series of cases in which no such agents were employed, there was a much higher percentage of cures, than in a series of cases in which they were used.

It is not due to drainage, as patients do better without it than with it.

It is not due to sunlight and air. We would hardly hope to cure a tuberculous joint by these agents; then why should we expect it in the peritoneum?

It is not brought about by the relief of pressure on the withdrawal of ascitic fluid, and consequent improvement of the blood circulation, as is shown by cases in which fluid has been withdrawn without benefiting the patient, and in which subsequent incision has resulted in cure.

We must remember that we really have no analogy to this phenomenon in other parts of the body, and it is difficult therefore either to prove, or disprove the other theories.

Lawson Tait thought that opening the abdomen produced a change in the physiological character of the peritoneum, which rendered it able to overcome and destroy the tubercle bacilli.

Pichini made a microscopic study of the peritoneal tis-

*Read before the Medical Society of the District of Columbia.

sue from a cured case, and concluded that after operation the tubercle underwent a connective tissue transformation.

Riva also found a growth of connective isssue, but observed that the process of transformation instead of advancing from the periphery toward the center, had its beginning in the center of the tubercle.

Kischewsky was the first to experiment with the lower animals, and concluded therefrom that disappearance of the tubercle was due to leucocytic infiltration, followed by an active development of connective tissue. Up to this time (1894) observers agreed in the belief that healing of the peritoneal tubercle was due to a fibrous transformation of the cellular elements by sclerosis. The most important work in opposition to this commonly accepted theory was done by Gatti of Turin. He studied carefully the development and decadence of the tubercle, and divided its life into three stages, viz.: (1) Fibrous Stage, which includes histologically the miliary tubercle, the diffuse, and the first beginning of the nodular form. (2) The Mixt Fibrous and Caseous Stage, which makes the transformation from the fibrious to the caseous tubercle. (3) The Caseous Stage, after this transformation has been completed. It has been proven by Gatti's numerous experiments upon guinea pigs, rabbits, and dogs, that if the operation is performed before the fibrous tubercle has reacht its full development it is without effect. To demonstrate this, abdominal sections were made at all stages, from a few days, to many months after inoculation. The tubercles in process of healing were examined at every stage, from 24 hours after operation, until complete repair had occurred. He found, during the first week after operation, that an amount of reddish, serous fluid exudes into the free peritoneal cavity, and gradually diminishes in quantity from the first to the seventh day. The first to the third days showed the peritoneum slightly reddened; the third to the seventh days, showed the tuberculous tissue slightly increast in volume. The vascular congestion was very slight, and restricted to the periphery of the tubercles, and the normal peritoneum between them. The connective tissue showed no changes, its cellular elements being in the same ratio as before, and above all there was no proliferation of the fibro-blasts. The round cells were neither more numerous, nor changed in appearance, the epithelioid cells were unchanged, and the phagocytosis no greater than before. Twelve days after operation, beginning hydropic degeneration of the epithelioid cells was observed, drops and rings of fluid occurring in the cells. The entire protoplasm was here and there changed into a fluid, containing the floating nucleus. No increase of fibroblasts was present. The tubercle bacilli were somewhat more numerous, phagocytosis was not increast.

Gatti further asserts, that connective tissue proliferation after laparotomy seldom occurs, and never only to a limited extent; and that it is not occasioned by the operation. "In general," he says, "it may be absolutely observed that the increase in the stroma goes hand in hand with the development of the tubercle. If the tubercle is really influenced by the laparotomy, and the specific irritation which has occasioned the development of the epithelioid, lymphoid, endothelial and connective tissue cells is arrested, or diminisht, so is the further growth of all these kind of cells at the same time checkt."

Gatti also shows that as the epithelioid cells degenerate, and the fluid is absorbed vacuoles are formed and the surrounding zone of connective tissue simply presses in to fill the space occupied by the vacuoles. By the time the epithelioid cells have undergone hydropic degeneration, all tubercle bacilli have disappeared from the tubercle. The conclusion is reacht that healing is not brought about by connective tissue growth; and that this erroneous criticism was made by the examination of cases that had fully healed. Connective tissue masses were found, and the conclusion formed that healing occurred by pressure upon the specific elements of the tubercle, by proliferating connective tissue. Only by examining animals at all stages after the operation can the process of healing be correctly studied. Gatti's theory therefore is, that the serum of the blood poured out after laparotomy has antitoxic action, and being brought into close contact for several days with the invading tubercle, by antitoxic action inhibits the growth, or destroys the tubercle bacilli. In proof of this theory Gatti calls attention to the fact, that if a laparotomy is done too early before fibrous tubercle has completely formed, the operation is not instrumental in curing the disease, because serum of the blood has not attained sufficient antitoxic strength to inhibit the growth of the germ; whereas a secondary operation after the maturity of the fibrous tubercle, is followed by eradication of the disease. In further proof of the antitoxin theory, it has been suggested that a less favorable result when drainage is used is due to the removal of the antitoxic fluid from the abdominal cavity, which then being drained away prevents specific action on the tuberculous lesions.

Hildebrandt (Munch. Med. Woch., 1898), performed a series of operations on healthy animals and on animals in which he had produced tuberculous peritonitis, and came to the following conclusion: The operation is followed by temporary arterial hyperemia, most markt in the serous sheath of the small intestine, less markt in the large intestine, and least noticeable in the stomach and the parietal peritoneum. This is followed by a venous hyperemia, lasting from four to seven days in a healthy animal, and longer in a tuberculous one. There is some paresis of the intestine. The amount of improvement which follows operation, seems to be directly in proportion to the amount of venous hyperemia which is caused, and this venous hyperemia is a phenomenon of inflammation, due to the action of air upon the peritoneum.

Naunotti and Baciocchi think that operation sets up an inflammatory reaction of the peritoneum, increases its absorbing power, phagocytosis, degeneration of the cellular elements, connective tissue growth, and vascularization of tuberculous nodules, with successive fibrous transformation.

Stchegoleff attributes the curative effect to a combination of traumatism of the peritoneum, thermic influence, penetration of air into the abdominal cavity, and perhaps action of light, causing irritation, followed by an inflammatory deposit.

Morris, of New York, concludes from experiments, that recovery after operation occurs, because putrefactive bacteria produce a toxalbumen in the peritoneal fluid, which is fatal to the tubercle bacilli. The reason it is more effective in the peritoneum, than the knee joint and elsewhere, is because of exceeding abundance of the lymphatics of the peritoneum, bringing toxic agents which are absorbed into close contact with the bacilli.

McBurney thinks that the only change which could produce any effect after operation, is the change in the vascular supply of the diseased tissue. Pressure being relieved the tissue receives a larger supply of fresh blood.

Abbe, (Med. Rec., N. Y., 1899), reports two remarkable cures, the result of simple incision and flushing of the peritoneal cavity with saline solution. He attributes the good result to an acute engorgement of the tuberculous nodules, followed by rapid development of the bacilli with a fibrious investment, then destroying the vitality of the tubercles, and engendering a retrograde metamorphosis of the neoplastic tissue.

Weir believes that the engorgement of the tuberculous nodules, and their subsequent disappearance, is partly attributable to damage done to the peritoneal surface by opening the abdomen. This was the common factor in all relief procedures, whether incision, or injection was resorted to.

Augustus Caille thinks that the brief exposure to the air, or sunlight of a portion of the accessible infected area, is apparently the starting point of a reparative process in cases that have resisted other therapeutic efforts.

Of all the theories mentioned the antitoxin theory (of Gatti) seems to me to be the most rational, altho the Scottish verdict of "not proven" obtains. It is very possible, however, that the good results secured may be due to a combination of several of the causes described.

DIAGNOSIS.

Clinically we recognize two varieties of this disease, viz.—1. With Ascites. 2. Without Ascites (i. e. fibrous or ulcerous).

Pathologically, accordingly to Adilbrot's classification, there are three varieties, viz.: 1. Ascitic. 2. Fibrous (fibrino-plastic); 3. Ulcerous (caseous, or suppurative).

The diagnosis is made chiefly by exclusion, as in tuberculous disease of other serous membranes, but the family and personal history may be of some importance.

It is of the sub-acute or chronic variety when it comes into the hands of the surgeon (for local treatment cannot be of service in the presence of a general, acute miliary tuberculosis). If the affection of the membrane be primary, the tubercle bacilli floating in the blood having been arrested in the vessels of the membrane itself, and there develop, we may have a simple ascites of slow development, without rise of temperature, or any serious disturbance of the general health. Under these conditions, we can only make a diagnosis (before an exploratory incision), by excluding the usual causes of ascites, such as diseases of the liver and kidneys, chronic valvular affection of the heart, and malignant tumors of the peritoneum and viscera.

On abdominal section, exit is given to a clear, straw-colored fluid, (sometimes sanguinolent), and the serous surfaces are found to be studded with white or yellow tubercles, which may be masst into tumors of considerable size. If very large, these masses may sometimes be felt by bimanual palpation per rectum, or per vaginam, and may simulate many different growths. If the peritoneal fluid be localized by pre-existing adhesions, there will be a great resemblance to any of the solid, or fluid growths peculiar to the locality. If confined to the epigastric, or hypochondriac re-

gions, it may resemble hydatid cysts, cysts of the pancreas, enlarged gall bladder, hydrosalpinx, or pyonephrosis.

If the lower half of the abdomen alone be involved, we might suspect pregnancy, ovarian tumor, hydrosalpinx, pyosalpinx, or pelvic abscess.

Tuberculous ulceration of the stomach, small intestine, appendix, colon, or mesenteric glands may involve the peritoneum by direct extension, or cause pertonitis by perforation.

The Fallopian tube is sometimes the primary focus. Osler estimates that the tube is involved in from 30 per cent to 40 per cent of cases of tuberculous peritonitis, which probably explains the greater frequency of the disease in the female. It will usually be very difficult to make a differential diagnosis without a celiotomy.

TREATMENT.

As we have a surgical disease to deal with the treatment should be surgical, not medical. It is important, however, to pay great attention to the diet and hygienic surroundings; and build up the general health by the judicious use of tonics.

A simple laparotomy made rapidly, but with great care, on account of the liability of intestinal and other adhesions, without irrigation, or medication of the abdominal cavity, promises the best result. In the great majority of cases, after evacuation of the fluid, the wound should be sutured without flushing, or drainage. If drainage is necessary, either a tube or iodoform gauze may be employed.

The incision should be large enough to explore the abdominal cavity. When hydrops exists, the cavity should be evacuated. When there is an encysted mass, the adhesions should be separated, and the cavity sponged out, provided it will not cause too much tearing and bleeding.

When possible the original focus of the disease should be removed, as when the female pelvic organs, or the vermiform appendix is the site.

The mortality from the operation is less than 3 per cent. Markt improvement occurs in abot 80 per cent, and a permanent cure is effected in about 50 per cent of all cases operated upon.

CONCLUSIONS.

From this resume of the literature on this subject we may draw the following conclusions:

(1.) Tubercular peritonitis is a surgical disease, and should be treated surgically, and not medically, for the simple reason that when treated medically patients die, but when treated surgically a cure is effected in a large proportion of cases, and a markt improvement follows in all.

(2.) The proper treatment is abdominal section rapidly and carefully performed.

(3.) Danger from operation is very slight, the mortality being less than 3 per cent.

(4.) Of the many theories advanced to account for the cure in these cases, the antitoxin theory of Gatti seems to be the most rational. It is not unlikely, however, that the good results attained are due to a combination of several of the various causes assigned.

(5.) Sepsis is not apt to occur on account of the pathological changes that have taken place in the peritoneum.

(6.) Tuberculous infection of the wound does not occur.

(7.) Antiseptics are useless, and drainage should not be employed if it can be avoided, as it is apt to leave a permanent fistula.

(8.) Most of the deaths after the operation have been due to a general tuberculosis or tuberculosis of some other organ.

(9.) The successful treatment of this disease depends upon the diagnostic ability, good judgment, technic and skill of the man behind the knife.

TREATMENT OF MENORRHALGIA OF PELVIC ORIGIN BY ELECTRICITY.*

BY G. BETTON MASSEY, M. D., PHILADELPHIA, PA.

What are we to do for the relief of our young women patients who suffer persistently from menstrual pain and spasm—those cases which have resisted all approved drug medication, including alimentary correctives and eliminants, as well as antispasmodics, and whose life is clouded during one-fourth of each month by an ever-increasing degree of stupefaction from opiates as the only relief from intense pain?

The pathology of these cases is usually of a dual character: A chronic inflammatory process in the endometrium, accompanied by congestive conditions in the ovary, (the endometritis being merely catarrhal), and also a most pronounced erethism of the pelvic neuromuscular apparatus. This neuromuscular erethism is the feature wherein these cases differ so greatly from those of mere endometritis in parous women, unaccompanied by the menorrhalgic spasms. The pain and spasm are present in the younger women probably, because of developmental imperfection. Should pregnancy occur a spontaneous cure is probable, not because the cervical cavity is then larger, (as incorrectly supposed by some), but because a full development of the organs has been produced by the remarkable trophic accompaniments of the gravid state. The idea that dysmenorrhea is due to obstruction of the menstrual flow has been shown to be a delusion. No accumulation is ever found in these cases. The steel dilators that are still improperly employed in a treatment based on this obsolete theory themselves disprove the presence of obstruction, for a canal that will admit them in their closed state is far larger than necessary as a drain for the menstrual fluid.

The truth is, that this really formidable operation, (the forcible dilatation of the cervical canal by steel dilators), oftener does harm than good; the cases temporarily relieved rarely experiencing comfort more than during one period, and this probably owing to an amelioration of the endometritis. The harm at times done by the operation is, on the other hand, an actual aggravation of the subacute catarrhal condition, ending, in some instances, in an ascending catarrh of the tubes and ovaries. Too often the final history of a case which has been placed under forcible dilatation, is abdominal section for removal of inflamed ovaries. This result may at times be merely in spite of the treatment, which failed to cure the case in its first stages; but in other cases I am positive the dire result is traceable directly to infection carried in by an unclean instrument.

But in electricity (as many physicians will now agree), we have a most valuable remedy for the permanent cure of persistent menorrhalgia, even of the most severe forms. Unfortunately, little is written at present from this point of view, and the unopposed views of the dilatationists remain uncontradicted. The electrical method may be carried out in office practice, is free from risk to already congested appendages, and may be relied on to cure, if conjoined with intelligent regulation of the general health and habits of the patient.

The technic consists of judicious blending of vagino-abdominal applications of the positive pole of the galvanic current with similar intrauterine applications of the same current. The intrauterine applications must not be used, however, until the congestive condition of the appendages is relieved, after which the local effect of mild mercuric cataphoresis within the cavity will quickly remove the endometritis, which (generally having its inception in "catching cold" during a menstrual period), is the initial lesion of the affection.

This choice of the positive pole is deliberately made as the result of large experience, results showing that electricity does not owe its value in these cases to a dilating effect, as some think (this effect being greatest at the negative pole), but rather to the cure of the endometritis. If there is no endometritis the electrode need not be passt within the uterus at all, the internal electrode being applied within the vagina alone.

I would urge an intelligent use of electricity in this condition on the part of all physicians engaged in general office practice. Expertness is readily gained by those equipt with sufficient gynecological and electrical training, and tho the actual work will require some time and trouble, the result can not be other than pleasing when it keeps the patient at home, makes her a well woman, and robs an operating-room of another sexless product.

*Abstract of paper before the section on Obstetrics and Diseases of Women, at the Fifty-first Annual Meeting of the American Medical Association.

The following very sensible conclusions are drawn by Dr. Donald McCrae, of Council Bluffs, Ia., in regard to first aid to the injured on railroads: (1) That the corporation contract for and purchase of the manufacturer a large number of the so-called "first-aid packages," similar to those used in the army. (2) That said corporation distribute these packages to proper disbursing officers to be placed at stated intervals along its line of road. (3) That said corporation require each and every conductor, brakeman, switchman, engineer, fireman and all other employes occupying dangerous positions, to carry upon his person one first-aid package in good repair. (4) That said corporation furnish these packages to these employes at cost price. (5) That said corporation furnish with each "package" a printed set of rules and directions governing the health of the individual and giving minute instructions as to the care of the injured, etc. (6) That said corporation require the head or boss of each crew or gang to make regular inspections as to the proper following out of these rules and the condition of the first-aid packages. (7) That each passenger coach possess one small chest,to contain sufficient cotton,gauze and other necessary first-aid material to care for at least ten persons.

GENERAL REMARKS ON GUNSHOT WOUNDS OF THE SPANISH-AMERICAN WAR.*

BY GEO. N. STERNBERG, M. D., WASHINGTON, D. C.
Surgeon-General of the United States Army.

Of 4,919 men injured by gunshot during the years 1898 and 1899, 586 were killed and 4,333 were wounded and received into the field and other hospital. The killed constituted 11.9 per cent of those struck; the wounded 88.1 per cent. In other words, 1 man was killed for every 7.4 wounded. The Mauser bullet must therefore be regarded as less deadly than the larger missile used during the Civil War.

The Medical and Surgical History of the Civil War shows the following casualties:

	Killed.	Wounded.
Confederate troops	51,425	227,871
United States troops	59,860	280,040
Total	111,285	507,911

In percentages, the casualties were: Killed 17.97, wounded 82.03; or 1 man killed to every 4.56 wounded. The relative proportion of killed was therefore considerably larger during the Civil War than during our recent experiences.

It is to be noted, also, that many of the wounds of the past two years were made by missiles of large calibre. Of those reported in 1899, 471 were specially stated as having been caused by the Remington bullet, of calibre .45. It is safe to say that had the whole number of wounds received been inflicted by the smaller Mauser or Krag-Jorgensen bullet, the percentage of immediately fatal wounds would have been materially lessened.

The less deadly character of the injuries by the modern bullet is manifested, also, when we exclude the killed and regard only those wounds which came under the care of the surgeons. Of these, during the two years, there were 4,333; and 259 of the patients, or 6 per cent of the whole number died. The corresponding percentage from the records of the Civil War was 14.3. Table C in Part I of the Medical Volume of the Medical and Surgical History of the War of the Rebellion, shows that, among the white troops of the army, there were borne on the reports of sick and wounded, 230,018 gunshot wounds, of which 32,907, or 14.3 per cent proved fatal. The markt reduction of the ratio of killed to wounded may be placed, therefore, to the credit of the small calibre bullet.

But the lessened mortality among the cases which came into hospital may not wholly be attributed to the humane character of the wounds inflicted by this missile. Due credit must be given to the improved surgical methods of the present day. Wounds of any region of the body may be taken in comparison and the result will always be found to show a decided lessening in the percentage of cases ending fatally among those of the past two years, as compared with those of the Civil War. Take, for instance, gunshot wounds of the femur. During the Civil War, surgeons in the field hospitals regarded a fractured femur as a serious menace to life, the danger from which was believed to be materially lessened by an immediate amputation. The field hospital surgical work after a battle consisted in great part of amputations, excisions and resections. Of 6,576 fractures of the femur, 2,923 cases were treated by primary amputation, 186 by resection, and the remaining 3,467 by conservative, or expectant, measures; this conservative action being due, in many cases, to a want of favorable conditions for the performance of primary operations. The limb was promptly amputated in 44.4 per cent of these gunshot fractures. On the other hand, during the past two years 82 cases of gunshot fracture of the femur were reported, 6 of which were treated by primary amputation, and 2 by resection, the remaining 74 cases being treated by conservative methods, not because the conditions were not favorable for the performance of primary operations, but because of a conviction that under present methods of treatment the limb could be preserved without adding materially to the danger to life. The limb was lost thru surgical intervention in only 7.3 per cent of the cases.

Not only limbs, but lives were saved by the surgical practice of the past two years. In the 82 gunshot fractures of the femur, the upper third was involved in 32, of which 5 were fatal; the middle third 27, of which 3 were fatal, and the lower third in 23, of which 1 was fatal..

The mortality varied from 4.3 per cent of the cases in which the lower third was fractured, to 15.6 per cent of the cases in which the upper third was the site of the injury; whereas the corresponding percentages of fatal cases during the Civil War were respectively 42.8 and 49.7.

The whole of the lessened mortality in these serious fractures may be credited to the protection given to the wound by the first-aid dressing and to the care exercised in the subsequent aseptic treatment of the fractured limb.

In penetrating wounds of the thorax the rate of mortality fell from 62.6 per cent during the Civil War to 27.8 per cent during the years 1898 and 1899. The Civil War reports show 8,403 cases in which the results were determined; 5,260 deaths occurred among the number. The reports for the later years, as already stated, show 198 cases, of which 55 were fatal.

There were, during the Civil War, 3,475 penetrating wounds of the abdomen in which the ultimate results were determined; 3,031 of these, or 87.2 per cent of the total proved fatal. During the years 1898 and 1899, 116 cases, 81 fatal, were recorded, the fatal cases constituting 70 per cent of the total. Of 10 cases in which laparotomy was performed, 9 were fatal.

The alteration in the percentages of mortality in fractures of the cranium is less markt than in wounds of other parts of the body. Of 4,243 cases of cranial fracture during the Civil War, 2,514, or 59.2 per cent were fatal. In 1898 and 1899, 68 cases were recorded, with 37 deaths, the latter forming 54.4 per cent of the whole number.

*Extract from annual report of Surgeon-General.

THE MECHANICAL, OR COMBINED PLASTIC AND MECHANICAL TREATMENT OF RETRODEVIATIONS OF THE WOMB.*

BY MARCUS ROSENWASSER, M. D., CLEVELAND, OHIO.
Professor of Gynecology in the Cleveland College of Physicians and Surgeons.

In this paper the writer wishes to counteract the effect of the numerous articles written on the surgical treatment of retroversion. Too many serious operations are being performed where safer, simpler and equally successful procedures would suffice. My own experience leads me to advocate repression of this too strenuous operative tendency, and to teach the tentative use of mechanical means in properly selected cases, limiting operations wholly to those cases in which they are specially indicated.

The particular operations to the indiscriminate use of which objection is raised are those requiring an opening of the peritoneal cavity, or cutting of the abdominal walls; and especially those entitled "Suspension" operations in distinction from those styled "Plastic," which include curettage and repair of cervix or vagina.

Retrodeviations of the womb are either simple or complicated. The complicated are further subdivided into those with movable, and those with fixt womb.

Of 116 patients treated for retroversion, 63 of the second and third degree were selected as proper subjects for purely mechanical treatment. They were treated by means of the pessary alone, or the necessary plastic operation was supplemented by a pessary. From a table furnishing the details the following summary is obtained:

Cured 11; Symptomatically cured 15; Improved 26; Not improved 11.

In the body of my paper I take up deviation each of the divisions, as above classified, and illustrate by a brief history of typical cases, unnecessary to quote in this abstract. But as a result of careful study of these, I wish to state positively that many cases of complicated retroversion with movable uterus can be converted into simple ones by plastic operations, and are then subject to treatment by mechanical support. After giving evidence refuting the objections generally raised against the use of the pessary. I submit the following conclusions, based upon the present imperfect status of suspension operations:

1. A retroverted womb uncomplicated by disease should be replaced and supported by a pessary.

2. Retroversion complicated by a diseased womb, or by impaired pelvic floor, the womb being movable, requires preliminary plastic operation to restore the normal condition before using a mechanical support.

3. Suspension operations should not be done simultaneously with the plastic in face of the probability that a pessary can sustain the womb in position.

4. Retroversion complicated by aggravated prolapsus requires simultaneous plastic and suspension operations to effect a cure.

5. The treatment of retroversion with fixt womb is that for pelvic inflammation. Whenever the latter requires laparotomy, or colpotomy, the retroversion becomes subject to such surgical treatment as may appear best suited to the particular case.

6. Retroversion, simple or complicated, in which mechanical support and plastic operation have failed to cure or to relieve, and in which the symptoms demand relief, constitutes a proper indication for a suspension operation.

*Author's abstract of paper read before the American Association of Obstetricians and Gynecologists at the Annual Meeting in Cleveland, Sept. 17, 1901.

SOME REMARKS ON GUNSHOT WOUNDS OF THE ABDOMEN—BASED IN PART ON AN EXPERIENCE OF 45 CASES.*

BY E. F. ROBINSON, M. D., KANSAS CITY, MO.

Penetrating gunshot wounds of the abdomen have always been markt by the highest mortality of any region of the human body. In the Crimean war, under old plans of treatment, 91.3 per cent of all wounds of the abdomen proved fatal on the French side—92.5 on the British. In our Civil War of 40 years ago, the mortality in belly wounds was nearly as high as the Crimean statistics. Now, with our modern weapons, the mortality would be far less—even with the same plan of treatment, judging from the decreast proportion of deaths to serious wounds.

Before the military events of the last three years, theoretical writers had predicted great destruction and loss of life from the contending forces equipt with the modern high-velocity arms, and had placed the mortality of the wounded consequently very high. What was their surprise then, in noting the results at actual warfare and in considering the accumulated records, to find that the number actually killed in battle was very small, and that the per cent of recovery of those severely wounded was surprisingly large. The results have shaken our belief in old establisht methods and we have therefore formulated opinions radically new to surgical practice.

In our own Civil War of forty years ago the killed were17.97 per cent of those hit—or 1 killed for every 4.56 wounded; while in the Cuban campaign, where the new high-velocity rifle was used, the killed were only 11.9 per cent—a very considerable decrease compared with the fatalities from the old rifle, fired with black powder. Similar figures are not yet at hand from the war in the Philippines, but from my own records of 1,596 cases of gunshot wounds, there were but 223 cases brought in dead or that died within twelve hours after admission. This leaves some 1,373 cases treated in the hospitals, and of this number but 58 died—a mortality of only 4.2 per cent of the cases treated!

The reason for this remarkably low mortality, we are led to believe, lies in the character of the bullet and the general adaptation of principles of aseptic surgery to military practice. The bullet is hard and smooth, of small caliber, and bruises and lacerates the tissues to the minimum extent. It does not carry foreign substances into the wound, but rather penetrates the tissues as a wedge. The track of the bullet does not remain rigid, as a permeable tunnel, but as soon as the missile has passt the walls fall together and thus further assist in the occlusion of the wound. The little hemorrhage that occures quickly seals the small opening, and there is very little destruction of the tissues about the wound in ordinary cases; consequently there is little media furnisht for bacterial growth. Above all, the bullet itself is almost always aseptic when it penetrates the tissues.

The fatalities from shot-wounds of the abdomen in the Cuban War amounted to 70 per cent under the best obtainable treatment. At the beginning of the war most surgeons favored operative measures in all such wounds—experence demonstrated that even Senn could not save such patients; he having four operations with four deaths. So we were forced to abandon operative treatment, save in the most exceptional cases.

The reasons for this high percentage of deaths from operative treatment in the field, as compared with the excellent results obtainable in civil practice are now plain: In private practice operation can usually be done early—in military work it is always 6, frequently 12, hours before the man can be placed on the operating table, when infection has already progresst too far; again, exhaustion, after a long ambulance ride or transfer from the field, places the patient in a condition not encouraging at least to the successful issue of a prolonged operation; further, the shock and mental anxiety attendant upon such an injury have already reduced his resistance materially. All these, and the ethical consideration (by no means a small one) of the greatest good to the greatest number all tend to convince the military surgeon that in time of war, at least, abdominal section for modern gunshot wounds should rarely if ever be performed. Another fact that materially strengthens the military surgeon in this opinion is the knowledge that the older teaching of Sims was wrong and that by no means all of the cases of penetrating gunshot wounds of the abdomen die. On the contrary, a surprisingly large percentage recover without operation. Mr. Watson Cheyne, writing from Cape Town (Boer War), gives his opinion that only about 20 per cent of the abdominal cases died; but in a subsequent paper he thinks this percentage is too low. Yet the fact is most evident from both the Boer War and our own experiences in Cuba and the Philippines that a very large percentage of these wounds recover—far greater without operation than with it.

In my own records there are 45 cases of penetrating gunshot wounds of the abdomen. Eight of these were brought in dead, or died in twenty-four hours, before any operative interference was possible. Of the 37 remaining, 30 were treated without operation; 20 recovered and 10 died; a mortality of 33 1-3 per cent. These wounds were received at all ranges and in all parts of the abdomen. The stomach, liver, kidneys and bladder were repeatedly punctured, and the cases recovered as if from a simple wound, with the least possible inconvenience.

There was one wound of the spleen that recovered, altho death from hemorrhage resulted in two other cases of wounds of that organ. One gunshot wound penetrating the abdomen from side to side recovered with a double fecal fistula. This case was the more remarkable as the wound was from a Remington bullet. Again and again I have seen cases in which the bullet had passt directly thru the abdomen from side to side with undoubted penetration of the intestines, yet the case recovered without the development of a single symptom! The fact that men in battle are apt to have their alimentary tract empty when wounded is an important factor in lessening the danger of infection. Often a small punctured wound of an empty intestine will become occluded by the protrusion of the mucous membrane, and the wound heal as if by primary union. The muscular contraction of the intestinal wall will convert the opening into a minute slit, and its agglutination to an adjacent coil of intestine or other serous surface will cause complete occlusion of the viscus in a few hours. Many cases were seen which developt bloody stools and a slight local peritonitis, yet recovered without serious symptome. Of course, however, if the bullet should strike the intestine at an angle, as it undoubtedly occasionally did, great damage would be wrought and the escape of much fecal contents would be inevitable; and it is believed this fact accounts for most of the fatal cases. Operation would of course be indicated if this were only known, but how to determine early which are these cases and which are not is the serious question that it seems almost impossible to decide. Again a Mauser bullet may pass directly thru the abdomen without penetrating the intestines. This fact was proven in my own experience by the following case:

In case No. 8,780, a private in the Thirty-seventh Infantry was struck by a ricochetted Krag while at target practice. The ball entered two inches above the border of the ribs in the left mammary line, and, taking a downward and backward course, lodged in the left loin. As the man was received at the hospital within an hour after the injury, contrary to the usual course, operation was decided upon. Under antiseptic precautions, the abdomen was opened in the median line and a large amount of free blood and clots removed. It was found that the ball had passt thru the omentum and mesentery, but that the intestines had entirely escaped injury. The bleeding omental and mesenteric arteries were tied and the abdomen flusht out with normal salt solution. Primary union resulted.

A similar case is also reported by Mr. Makins in his recent book, "Surgical Experiences of the (Boer) War." In this case the bullet had passt thru the cecum and sigmoid, but did not touch the intervening intestines. In my own case severe and persistent hemorrhage from the mesenteric and omental vessels was in itself sufficient indication for operation, yet this was but a mere matter of chance. It is needless to suggest that to open the abdomen and make a prolonged search for a perforation that does not exist would not increase, to say the least, the patient's chance of recovery.

My own operative experience with gunshot wounds of the abdomen is recorded in the record of 7 cases—3 recovered and 4 died. One of those to recover I have just reported in the case in which no perforation of the intestine existed.

The second was a gun-shot wound directly thru the stomach in a native Filipino. He was shot by a sentry by mistake at night, while trying to pass the picket line. The operation was done two hours later. The stomach, which was found nearly empty, was penetrated in upper anterior and posterior wall. The openings were closed with a double row of Lambert sutures of fine silk. The abdomen was flusht with salt solution and then wiped out with gauze. As no leakage had occurred, the wound was closed without drainage. He made an uncomplicated recovery, and could not be kept in bed longer than the twelfth day.

The third case was that of a private, Company M, Twenty-ninth Infanty, shot by a comrade by accident. The bullet (Krag) entered the abdomen two inches above left anterior spine of the ilium and emerged three inches posterior on same plane. A knuckle of small intestine was penetrated, but colon escaped injury. Wound of entrance was enlarged and abdomen opened. Perforation was immediately found and sutured. As there was

*Abstract of paper read before the Jackson County Medical Society.

no evidence of further injury, search for other perforations was not continued. Considerable blood and some feces had escaped, as the wound was larger where the bullet entered the intestine. These were sponged and wiped away—no flushing of abdominal cavity, but gauze drain for forty-eight hours. The rents in the intestine were united by a single continuous Lambert suture of fine silk. Recovery was complete and uncomplicated.

My four other cases died. One was a Remington and three Mauser wounds. On the whole, then, I would sum up my conclusions in regard to gunshot wounds of the abdomen in this wise:

In civil life, where the wound is apt to be received after a hearty meal, when the bullet is generally of soft lead and is fired by black powder and is prone to cause infection, where the patient can be immediately surrounded by every facility for modern aseptic procedure, his chances are doubtless better with operation; but in military practice, where the alimentary tract is generally empty, where the abdomen is perforated by a small bore high-velocity projectile, which is usually aseptic, where delay must supervene before proper surgical surroundings can be secured, and where the diagnosis of intestinal perforation is often uncertain, where if wounded the opening may be occluded by natural processes if not interfered with, certainly the patient's best chance of recovery lies in conservative treatment without operation.

SYPHILIS AND THE GENERAL PRACTITIONER.*

BY O. L. SUGGETT, ST. LOUIS, MO.

Professor of Syphilology in Barnes Medical College; Syphilologist to Woman's Hospital of the State of Missouri; Fellow St. Louis Academy of Medical and Surgical Sciences.

In offering a paper upon the subject of "syphilis and the general practitioner," it is presumed that I shall traverse a familiar and interesting field and invoke a generous discussion. When we remember how large a percentage of all human suffering is attributable to this disease and its sequelae, and consider how varied are its several manifestations, it is my belief that no other disease offers such a medley of contradictions and at the same time displays so regular a train of pathological phenomena; so malignant yet so benign; so certain yet so uncertain; so regular yet so irregular; so fearful yet so insignificant; everything positive and everything negative. If of this subject this can be truly said, is not its importance manifest?

We have certain countries, states, counties and localities where certain maladies are unknown. We have certain seasons when a given disease cannot develop. We have certain nationalities to which given conditions are foreign. We have certain ages peculiarly susceptible to given ills. We have certain organs and parts of our economy proof against given attacks.

But the subject under discussion prevails in all countries, states and localities, in all seasons, among all people; in all ages, and no part of our anatomy is proof against its ravages. What, then, as medical men can be a more inspiring subject—realizing as we only can, the horrors of the "picture of old, likened unto the most revolting and disgusting of punishments?"

But the faithful guardian of the public health (the physician) has been ever awake to the necessities of the hour, and our modern methods have done much to strip this "Angel of Death" of his most potent dart.

Nature, too, stands with outstretcht hands, holding in either her grandest gifts, which, judiciously applied as "with the rapidity of a drama," dissolves the spectacle into one beautiful to behold.

Physicians now acknowledge no specifics. In our hands nothing is infallible. We are taught to banish superstitious sentiments, and in their stead establish scientific facts. We are also directed to consult nature's encyclopedia, and there learn her wants. Yet in this instance we so approximate a specific in the possession of mercury and iodine, and so fail in our efforts to interpret the appeals from nature, that to restrain the spark of credulity within us we with difficulty triumph.

In the recognition and treatment of this disease, ease and difficulty, pleasure and disappointment, offer to view as the scene revolves. Yet if our opportunities have been improved and due diligence observed, no feature of our labors promises richer returns to both patient and physician.

Recognition of the initial lesion is the all-important task; an error at this time is most serious. Therefore, should the manifestation fail to obey the stereotyped description, and the history be indefinite and irregular,one must be particularly attentive lest he lead in error, and rob not only one but many of that which he cannot return. You cannot be too guarded at this moment; especially in the matter of the source of infection.

*Paper read before the St. Louis Academy of Medical and Surgical Sciences.

I have seen subjects from whom any desired history could have been elicited should the condition suggest either chancre or chancroid! I have seen the syphilitic state follow a lesion where the best obtainable history was negative; and the original sore be in appearance chancroidal. I have seen syphilis follow a lesion closely resembling balanitis. I have seen syphilis develop when no local lesion had been observed by the patient. I have seen chancres and chancroids existing at the same time, each typical in appearance and history. I have seen the two lesions so similar in appearance that I do not fear contradiction when I say no living man could with precision predict the consequence. I have seen inguinal lymphatic glands undergo suppuration from chancroidal infection, and at the same time observed other glands with the customary specific hardness followed by secondary lesions. I have also encountered the mixt sore.

Yet with all this, the average patient presenting himself with either sore offers little that is difficult. These mentioned exceptions are the rare instances intended to impress the general practitioner with the importance of a correct beginning.

When a diagnosis is establisht and primary syphilis is certain, other important matters immediately present themselves. It is now one's duty to advise the patient of the nature of the ill, the probable course, an idea of treatment, etc., etc. And to do this with satisfaction to him and justice to one's self is frequently a task. One may here perhaps say, "in two years I may pronounce you well." That "the treatment will, in a measure, only conflict with your business and pleasure." That "you will be enjoined against those things which we all should avoid." That "the disfigurement of person and moral disgrace will be studiously concealed." That "when discharged there will never be a return of the affection." That "a cure may be confidently expected," etc., etc.

For the moment one feels the impression thus made, by the rays of sunshine and evident ectascy in the patient; the treatment here begins, and to him all the world again seems smiling as the system drinks in the cure! The chancre soon fades into nothingness, leaving but a trace to mark its former site; the secondary lesions come as a gentle reminder that one's diagnosis is correct, and urge one to pursue the proposed course rigidly; then both bid adieu.

During this, and while the heart of the patient is overflowing with thanksgiving and praise, he is obedient, submissive, courteous and faithful; only an intimation of the doctor's wishes is necessary for him to discard his vices with apparent ease. He meets his engagements with his attendant with dispatch. He enjoys the physician's company. He resolves himself into an example of morality and method. He no longer fears the disease or dreads the treatment. He keeps his own counsel and "pursues the even tenor of his way." His condition is now giving him little concern; yet he grows attentive to all discussions bearing upon this subject, and at last—confides in a friend who has since passt thru a similar experience! He here receives freely much advice from this "fountain of knowledge," and at last—concludes to consult the physician extolled by his friend, who from the well-being appearance of the patient almost invariably offers advice which is both acceptable and disastrous! Cases of my own have often been thus led to ruin by the advice of an incompetent general practitioner or an unscrupulous knave, whose only motive was to break the existing faith at the dear price of human health, even tho he himself may gain nothing!

It is now that the patient is seen conspicuously seldom; when met, it is hard to interpret his significant expression and distant demeanor. He has been advised fully, he has been treated well, yet he fails to tell his reason. New obligations arise, and the occurrence (as well as the patient) is soon lost in the midst of our strenuous life.

Another lamentable picture too often encountered: One's friend, the companion of one's family, perhaps, one whose honeymoon is scarce spent, and in whose future appears no speck to mar her happy anticipation of real life; who has aptly learned and now executes her full portion as a wife; who now numbers the months when her babe, quickening within her, will become a joyous individual; it is now the doctor is consulted, only to learn that in innocence she is a victim of syphilis; he evades her inquiries, and proceeds with caution. He sees the husband and here learns the history of his uncured ill. To be honest with her means ruin. Therefore, the family doctor is compelled to treat her falsely, assigning as a couse for her trouble that which circumstances suggest. Here the husband is told, perhaps, for the first time, the real nature of his trouble, and realizes now its horrors, when great injury is done.

From what has been said thus far (which is but a fraction of what I would like to offer), may be inferred that which I now say specifically: I am forced to believe that the attention given this branch by the general practitioner is not in keeping with its

importance—that I do not consider the general practitioner AS A RULE, competent to assume the responsibilities of the situation. I have frequently met those well verst in the several other departments of medicine, with well appointed offices, and establisht reputations, but painfully ignorant about syphilis. I have been shockt to hear one of apparent intelligence say, "Mercury is a very dangerous remedy; I use it only in minute doses and for short intervals"—that "I rely upon sarsaparilla, McDade's Mixture, Syr. Trifolium Co.," or some other nostrum of an equally worthless sort.

Gentlemen, SYPHILIS IS CURABLE. It responds to treatment readily. No fact in medicine is more clearly proven. Reliance upon but two remedies must be placed, and firm reliance can be placed upon these: Mercury and the iodides.

Notwithstanding these facts the world is full of uncured syphilis, and who is responsible? Who is responsible for that vast army of frail, foul, deranged and wretched beings, bearing their bodies, with ulcered legs, receiving air, food and drink thru putrid channels—so miserable that they but want an excuse to die?

In answer (I wish to be generous to the fraternity of which I with pride acknowledge myself a member), I can but express my subdued sentiments, and lay the fault but too often with the doctor. It is to the young physician, especially, that these subjects apply, as a rule; their reason for so doing being well understood. Therefore, I would say to this element of the medical fraternity: Be you deeply impresst with the enormity of the trust! Spend a generous portion of the revenue you derive from syphilitic patients for literature bearing upon these. Become a master of this very important and comprehensible subject, and give the unfortunate full benefit of the sublime truths of modern research! I have yet to encounter one unwilling to part generously with his daily earnings or to draw his check in full. Reciprocate this generosity. Measure him in return ten-fold. Place a high value upon his life, health and posterity.

I shall not enter into the details of treatment, nor attempt to group anew the various syphilides; neither will I formulate or refer to the tables of differential diagnosis at this time, but will conclude by saying that it matters little at what place one lives—at Hot Springs in Arkansas or elsewhere in the country or the city—the means of cure are at our command, if we will but make a proper effort to apply them.

Having been a general practitioner, I feel at liberty to so express my views, and invite an exchange of sentiments of all colaborers, hoping that I have underestimated the ability of none.

THE TREATMENT OF EMPYEMA.*

BY JAMES H. DUNN, M. D., MINNEAPOLIS, MINN.
Professor of Surgery in the University of Minnesota.

Present methods of treatment of pyothorax are, as a rule, not satisfactory; and decidedly behind the present state of surgical science. Tardy diagnosis, inefficient drainage and slovenly after-treatment render results less brilliant than they should be with out present-day knowledge. The importance of proper methods cannot be too strongly impresst upon those who regard the treatment of pleural suppuration lightly, and as a fair field for anyone who can insert a tube and use a syringe.

The degree to which the compresst lung recovers usefulness depends on early diagnosis and prompt operation; thickened pleura, imprisoned lung and general sepsis are not conducive to prompt and perfect recovery.

In certain weak cases (as immediately following pneumonia), it is sometimes necessary to postpone operation for a few days, during which delay the character of pus may be determined by the use of the microscope. However, pleural suppuration is so generally due to mixt infection or to virulent infection that practically bacterial examination would rarely affect treatment.

The entire matter may be thus summarized: Early diagnosis, prompt and efficient drainage and aseptic after-treatment.

Pleural suppuration being present, all the world agrees that the pus should be removed at once; how? And where? are the two questions to be discusst.

The nature of treatment must be determined by an exact knowledge of the pathological conditions present in each particular case—certain benign infections are easily cured by means wholly inefficient in others; a very few even yield to simple paracentesis—some are cured by incision without resection of a rib—while others require excision of almost the entire chest-wall. On the whole, it may be said that the normal procedure for acute empyema is thoracotomy with resection of one rib; it alone is adequate to the best treatment of the majority of cases and (when skillfully done), is scarcely more dangerous than mere intercostal incision. The opening must always be made large enough to allow of the removal of all clots and debris, to admit the fingers for careful examination of the cavity and to provide long-continued drainage; enough rib should be resected to admit the insertion of three fingers.

Three exceptions to the rule may be mentioned: (1.) Pleurisy undoubtedly due to pneumococcic infection (especially frequent in childhood), may be cured by thoracentesis without drainage; a second, or even third, aspiration may be necessary. (2.) Certain purely tuberculous pleurisies may be treated by evacuation without drainage; but as soon as mixt infection is detected excision must be resorted to. But it should be remembered that most tuberculous pleurisies are serous, not purulent—the presence of a fluid resembling pus usually itself indicating mixt infection. (3.) In large and double effusions, gradual evacuation by paracentesis is advisable as a preliminary measure, the rib resection being delayed a few hours. Or in double empyemas the rib resection may be made on one side and the siphon drainage of Buelau may be simultaneously instituted on the other..

In draining the pleural cavity the opening should be placed at the lower and posterior part of the collection, or rather at the point which is to become such as the cavity shrinks. Leaving out of consideration interlobular and supra-diaphragmatic collections, intra-pleural effusions vary considerably in their location in different cases; hence to place the drainage opening at any set place on the chest is manifestly absurd. It is doubtless a fact that purulent effusions most frequently occupy the lower and posterior portion of the pleural cavity; hence, in the majority of cases of empyema, the eighth rib, well back, just outside the angle of the scapula, is best chosen.

In the mid-axillary line (and anterior to it), the muscular covering is less thick than upon the latero-posterior aspect of the chest, and this naturally inclines the operator to choose a location which is often ill-placed. The usual dorsal position of the patient on the operating table further increases the difficulty of operating posterior to the mid-axillary line. An opening in this plane is quite sufficient for certain empyemas, but if the case is a bad one, i. e., a virulent infection, and the cavity large, I have often observed that the residual cavity, after a few days or weeks of drainage, is most often found to be upward and backward from openings placed low and forward. Hence, in most cases, a drainage placed moderately low and well posteriorly upon the unevacuated cavity proves most satisfactory during the latter course of the treatment. Indeed, in certain cases, the rib is best resected as far back as the angle. In at least three cases I have observed moderate-sized cavities located upwards and backwards under the scapula which could only be drained by such posterior-lateral incisions. In many cases drained by others or by myself, I have found after a short time that the opening came to be situated below and in front of the cavity, leading to the necessity of reopening further backward and upward. The rule ought to be to place the opening moderately low and well posteriorly upon the cavity. If it be too low, the diaphragm in certain cases soon rises over it and the drainage is soon imperfect and troublesome. I have never seen it placed too far backwards for the best results, but many times too far forwards. However, as a high posterior rib resection is a rather more formidable operation in certain cases, it is well to resect the eighth rib in the mid-axillary line as a primary measure, and some weeks later, if necessary, make a second higher and more posteror resection if required.

After resecting the rib, the first opening thru the pleura should be small so that a large part of the effusion may drain away slowly. When this has taken place the pleural incision is increast correspondingly to the piece of rib removed. Thru this copious opening the cavity may be thoroly cleansed by wiping out with bits of gauze on a long forceps. In case the condition of the patient demands it, this may be deferred to a subsequent time. Immediate irrigation of the cavity is often objectionable and always less efficacious than wiping out with gauze. In my opinion lavage of these cavities has a very limited field of usefulness. Two things are quite clear: 1, with the chest opened freely as here indicated, frequent irrigations are not necessary; 2, the injection of empyemic cavities thru small openings is decidedly dangerous. Sudden deaths, syncope, embolism, paralysis, various nervous phenomena, etc., which have been long observed and much discusst, are undoubtedly the most striking, but not the most frequent accidents of irrigation. Rises of temperature and various septic phenomena and complications very frequently follow too diligent lavage of these cavities. The smaller the opening and the more forcible the injection, the greater the liability to these various accidents. I have never seen any serious accident follow the gentle lavage of freely opened cavities, but I have come to believe that they do better with a minimum of irrigating.

*Abstract of paper read before the American Medical Association, St. Paul, 1901.

The idea of stamping out infection by the use of antiseptic washes is no longer rational. A few days after the free opening of a cavity peroxid may occasionally be poured over its walls or applied with a swab of cotton, or it may be washt out with warm salt solution if desired. The indications usually given for lavage are: 1, abundant purulent secretion; 2, fetid secretion; 3, if the fever persists or reappears after a period of apyrexia. It may surely be debated whether lavage avails anything against either of these indications. I am certain that it is a frequent cause of the latter condition, i. e., persistence or reappearance of the fever, and I have repeatedly known the temperature to subside when lavage was stopt. When a cavity cannot be kept clean without much lavage, it usually needs to be reopened more freely. It is better to devote greater care to external cleansing of the wound and skin, and to the occlusion dressing and less to the diligent squirting of quarts of fluid into these cavities. When the secretions increase or become foul, the cavity ceases to shrink, and the opening has become small, free reopening is usually followed by general and local improvement, wheras the most diligent syringing shows little if any beneficial results.

With a large opening of the chest the chief object of the drain is to keep the wound from closing. When the bottom has been taken out of the reservoir, draining away of the secretion can scarcely be prevented. With a small hole entering the cavity at some point on its external wall, often with clots and debris retained, it can scarcely be kept clean with an irritating drainage tube. For the purpose of keeping the wound open and its lips in a good healthy condition, copious gauze drainage is preferable in most cases, at least in the early after-treatment. When the amount of secretion is great, rubber tubes surrounded by gauze may be preferable. There are many objections to exclusively tube drainage in these cases: 1. The wound is encouraged to close down rapidly and the command over the cavity by direct inspection is lost. 2. The pressure of the tube exercises a bad influence on the soft tissues. The tract occupied by a tube is usually in an unhealthy condition, in markt contrast to that of a large wound held open by sterile or iodoform gauze. There are doubtless stages and conditions in the course of the treatment of empyemas in which tubes are very useful, but I find myself using them less and less. When desirable, two large soft-rubber tubes placed side by side may be used. They should be of the size of the thumb, short, and not press upon the pleura. Great care is necessary in their daily sterilization, and some contrivance to secure against their loss in the chest must be instituted. Valvular drainage tubes, as proposed by Williams and others, with the idea of expanding the lung during inspiration, are certainly not necessary and of doubtful efficiency. In empyema when the chest is opened the collapst organ is expanded by air from the sound lung during expiration and in coughing. And this force is apparently much more effective than inspiratory efforts with the chest closed by a valve. If tubes are to be used for chest drainage none are better than those manufactured on the spot from sterile pure soft-rubber tubing, but personally I prefer gauze drainage for the most part and use tube drainage only in stages and cases where it seems more expedient. Many cases may be drained all thru by gauze. More frequently after a time, when the cavity has become small, tubes are substituted with advantage. At times it is necessary to drain a considerable cavity thru a small opening on account of the condition of the patient in which case tubes are quite indispensable, but as a rule a cavity needs a freer opening.

DRESSINGS AND AFTER-CARE.

The dressing of empyema cases is often very careless. These patients being ambulant most of the time, are often allowed to shift for themselves, and the after-treatment is anything but aseptic. Strictly speaking, a careful aseptic occulsion dressing ought to be maintained thruout the treatment from the first opening to the closure of the cavity. How rarely this is achieved we all know! While the dangers of seriously reinfecting an old granulating cavity are not great, such accidents may often be observed in the most chronic cases and doubtless sometimes occur in the early stages of acute cases, when a comparatively benign infection is rendered more virulent by the entrance of infection from without. Patients and attendants should be more impresst with the necessity for a rigid aseptic after-treatment of these cases. While the discharge is free the dressings should be changed as often as they become saturated, and during the whole after-treatment at least once a day.

Besides the general attention directed to the constitution and the local care of the wound, a third matter ought to receive constant consideration, viz., the progress of the expansion of the collapst lung. During the early days of the after-treatment, cough tends to this end; hence, it should not be too far subdued by narcotics. If, after the patient has had time to recuperate, it is found that the lung is slow in expanding, means should be instituted to assist it. Until the cavity has nearly closed, forced expiration is the most efficient and practical means at our disposal, and the patient should be instructed in methodical forced expiratory movements with closed glottis. The suggestion of Koenig to require such patients to blow up air pillows several times daily is practical.

MOVABLE LIVER—HEPATOPEXY.*

BY J. H. CARSTENS, M. D., DETROIT, MICH.
Professor of Obstetrics and Clinical Gynecology in Detroit College of Medicine.

As there are but few cases of movable or floating liver recorded, the following case may be of some interest:

Mrs. R., Elkhart, Ind., (a patient of Dr. Mast), aged 48 years, passt the menopause; married a second time, but never had children. She is a hard working woman, weighs about 220 pounds, and never has been seriously ill, but has had the usual symptoms of the menopause well markt. During the last year she had been troubled with pain in the region of the liver extending down to the pelvis, a sensation of fullness and distress, sometimes was obliged to keep in bed for a half day to two days; occasionally she was jaundiced for a few days. All symptoms indicated some diseased condition of the liver, but no symptoms of gall-stones; no severe colic; just a feeling of fullness and distress. Her bowels were inclined to be constipated, her digestion was good, altho she complained a good deal of gas. The nervous symptoms were also well markt with tendency to hypochondriasis, a feeling of despondency, as we so often find in disturbances of the digestive system.

Examination: Stout, heavy woman, in whom it is difficult to make any positive diagnosis of abdominal trouble. Percussion on the right side down to the pelvis indicated a tumor, or solid mass; the character of which could not be made out, but it might be (1) an enlarged liver, (2) tumor of the kidney, (3) an ovarian tumor developt in that direction, or possibly (4) a long pedicled fibroid. It might also possibly be a malignant growth, altho the general appearance of the patient would discredit such condition. Besides it might be one of those very rare tumors sometimes found, such as a hydatid or a cyst of some other organ attacht to the right side.

Therefore I did not pass an opinion on the character of it, but suggested an exploratory operation and agreed to do whatever was indicated.

It did not seem movable—so its true character did not suggest itself.

She was prepared and operated upon April 24, 1900. An incision made at the outer edge of the rectus two inches below the ribs and downwards for two and a half inches. After cutting a thick layer of fat and opening of the peritoneum, I found that the enlargement was the liver; the right lobe being very much enlarged and hanging down to the brim of the pelvis. It could be moved and easily replaced in its normal position and then projected about two inches below the ribs. There were no gallstones and all other abdominal organs seemed normal.

The only thing to do seemed to me was to fix the liver in its normal place as nearly as possible. I, therefore, scraped as thoroly as I could the anterior side of the liver and the anterior wall of the peritoneum, so as to get it thoroly denuded of epithelium and allow adhesions to take place. I then brought the raw surfaces together, took a hold of the coronary ligament and brought it forward and stitcht it to the upper angle of the wound.

The patient made an uninterrupted and perfect recovery.

*Read before the Mississippi Valley Medical Association, Put-in-Bay, September, 1901.

It is generally believed that cocaine solutions have practically no effect when applied to the skin. This is not true, according to Dr. Willard P. Beach, of Brooklyn, N. Y., who says (Brooklyn Medical Journal): To secure an anesthetic effect two considerations must be strictly adhered to: First, use a freshly made solution of not less than 40 per cent; second, apply for a proper length of time, viz., not less than one hour, and, better, for one and one-half hours. Mode of preparation: The parts are thoroly cleansed of all sebaceous and oily matter, and then well dried and made aseptic, then the solution of cocain, 40 per cent strong, applied over and widely adjacent to the line of incision by means of a piece of borated absorbent cotton saturated in the cocain solution for twenty minutes; then the parts are allowed to dry for ten minutes and the cocain reapplied as before, and repeated thus for from one to one and one-half hours. Any ordinary skin may be cut thru by following the above directions, without pain. The great point is to use plenty of time, as it takes much longer for the nerve bulbs of the skin to be made numb than those on a mucous surface.

SURGICAL NOTES.

In an article on first aid to the injured, Dr. H. Landis Getz, of Marshalltown, Iowa, says that: The environments in which accidents occur, especially on railroads, are invariably such as make it impossible for even the best professional skill to do thoroly clean work in the same time that would be required to transfer the patient, and still do the work conveniently, comfortably, and properly, under suitable surroundings. Such being the case it is easily understood why lay first aid, by whomsoever it may be rendered, should make no attempt at cleaning wounds, either with instruments, hands or solutions of any kind. No attempt should be made at reducing compound fractures or the surgical dressing of the simplest of wounds of any description whatsoever. The careful and rigid observance of such a course will spare the patients unnecessary suffering, mental and physical, will insure a more rapid, satisfactory, and, in many instances, a less painful recovery, and last, but not least, will here and there be the means of avoiding extensive and serious infection, local and general, thus avoiding the occasional necessity for amputation of some member of the body, and even sparing a life which would otherwise surely occasionally be lost. The application of other than the simple principles and practices of first aid is liable to entail retarded recovery, which means unnecessary expense to the railroad or other employer. Should a hand, foot, arm or leg, or a life be lost thru an attempt at too elaborate first aid, especially where the company or employer is in any way to blame for the cause of the accident, the additional claim for recovery of damages would be quite an item over and above what might be expected from the effects of the original injury.

Those who have abandoned sponges in favor of gauze because sponge could not be boiled, yet who sigh for their old-time friend, will be delighted to learn that Elsberg has perfected a method of of securing perfect sterilization by boiling. He began his work by observing that sponge consists esentially of an albuminoid material called "spongein;" it is perfectly precipitated from its solutions by a solution containing two per cent of tannic acid and one per cent of caustic potash; hence he argued it should be perfectly possible to sterilize sponges in such a solution without destroying their desirable qualities. On testing this in practice the theory has been found correct. The solution can be used again and again, and after infected sponges have been treated in this way, bacteriological investigation shows them to have been rendered absolutely sterile. The method of procedure is briefly as follows: The sponges are freed from calcareous matter by immersion for twenty-four hours in eight per cent muriatic acid solution, and then thoroly washt in water. They are next boiled for fifteen minutes in a solution containing one part of potassium hydrate and two parts of tannic acid to one hundred parts of water. The sponges are than washt and squeezed in sterile water or in carbolic acid or corrosive-sublimate solution until the potassium hydrate and tannic acid solution has been removed. They are then preserved in a three to five per cent solution of carbolic acid.

Not every surgeon is going to remove the Gasserian ganglion. Those who contemplate it will be interested in a report by Dollinger. He first of all cautions avoidance of the middle meningeal artery. By examining a large number of skulls he concludes that in 59 per cent of the cases the place of entrance of the middle meningeal artery lies so far behind the foramen ovale that one can approach it without requiring the ligature and subsequent division of the artery. In 35 per cent one can also remove the ganglion withoue ligating the artery, but to do so must get at the ganglion by going behind in a median direction. The second root leaves the skull further forward; it is therefore accessible without ligature of the artery. He also concludes that in about 96 per cent of cases the Gasserian ganglion can be removed without ligating and injuring the arteries, and he has thus performed the operation in five cases. The method employed is given as follows: "After opening the skull and bending back the bone flap, a finger is introduced between the dura mater and the base of the skull until the middle menigeal artery is reacht. Before this one turns to the second and third division of the trigeminus and peels off the dura mater with an elevator with a blunt point. In this way the elevator is introduced from outward and medianward to upward and backward, in which way it is easy to separate the Gasserian ganglion partly from the base of the skull and partly from the dura. In the same direction the ganglion may be reacht with forceps, and drawn out, together with the trigeminus root (having, of course, previously cut across the two divisions of the trigeminus mentioned above). Dollinger did not use the Krause spatula when lifting the brain, having only made use of this spatula in the first two cases performed according to the old method. Now he avoids its use, because the assistant who holds it cannot see into the aperture leading to the base of the skull, and therefore he lifts the brain either too high or too low, to avoid which the operator has continually to guide his hand. For that reason he should lift the brain himself with an elevator which is 1½ cm. wide, and is slightly bent on its flat side; this is held in the left hand in such a way that the surgeon can perform the operation by the aid of light projected by an electric reflector. Following this plan considerably shortens the operation. The second operation which he performed lasted only twenty minutes and the average duration of the other three was thirty-eight minutes. The conclusions which he gives from a summing up of his experience are: (1.) The Gasserian, ganglion can be extirpated without ligature of the middle meningeal artery. (This is proved by his five cases.) The operation is thereby much shortened, and the complications arising from the ligature are obviated. (2.) The anterior division of the artery in half the cases lies in the closed canal of the parietal bone more frequently than in the open sinus, but even then hemorrhage does not in every case occur on turning down the bone flap. (3.) With regard to these rare cases of bleeding, we need not previously cut down on the external carotid artery, because, should hemorrhage occur while compressing the common carotid artery we have plenty of time to plug the foramen spinosum, or, when necessary, to ligature the external carotid artery.

A successful gastrostomy with some unusual features is recorded in Medical Dial (October), by Dr. F. T. Meriwether of Asheville, N. C. The patient suffered from a carcinomatous tumor of the pyloric end of the stomach, and there was also a cardiac mass obstructing that region. Gastroenterostomy was performed with the Murphy button, and then gastrostomy as follows: An external opening which had been made by an incision of four inches over the inner edge of the left rectus was now joined by a transverse one from its upper end extending to the left for three inches. A rubber tube was next inserted in about the middle of the anterior surface of the stomach, emerging at the end of the transverse incision thru the skin. Two catgut sutures were applied below the opening in the stomach, then six sutures, each one-fourth of an inch further above and below the tube than the preceding one, the sutures being half an inch apart and passing thru the peritoneum, then thru one-fourth of an inch of the two external coats of the stomach, then over the tube, then thru the stomach as before, and then thru the peritoneum. A last suture was passt thru the two coats of the stomach and then under the tube, making something like a purse-string suture. All these were of catgut. When tied they brought peritoneum to peritoneum and formed a fluid-tight, funnel-shaped canal leading from the skin to the opening in the stomach. The peritoneum was stitcht around the portion of the tube where it emerged and the skin and muscle closed by thru-and-thru sutures of silkworm-gut. One fine catgut suture was placed thru the tube where it entered the stomach to anchor it. The patient was fed before leaving the table after the stomach had been washt out. She came out of the operation well, gained in weight and about four months later appeared to be in good condition. Three months after the operation she removed the tube and refused to allow it to be permanently replaced. At one time it was left out thirty-six hours, but there was no difficulty in reintroducing it. Five months after the operation, however, the old difficulty in swallowing returned, and she gradually sank, living, however, until November. The button did not come away until the eighty-first day.

Dr. A. M. Phelps, Professor of Orthopedic Surgery in the New York Post-Graduate Medical School, advocates the treatment of tuberculous and purulent hip-joint disease with large speculum drainage after the use of pure carbolic acid. All abscesses about the joint, tuberculous or purulent, he maintains, should be opened for the purpose of exploration as soon as the diagnosis is made; secondly, for drainage, and for any surgical procedure which might be deemed advisable. Excisions should be performed when the acetabulum is extensively diseased, the diseased tissues removed; and the joint thoroly washt out with pure carbolic acid, immediately followed with pure alcohol, and finally with a two-per-cent solution of carbolic acid, and as large a drainage tube of glass as the wound would take should be inserted. Thru this large drainage tube the packing for drainage purposes can be made. The large glass speculum enables the operator to watch every pathological change which takes place thru the wound. It keeps the soft parts widely separated, and prevents their union until after the bone has granulated up and healed. It enables the operator to dress his patient without doing violence to the granulating surfaces of the wound and inflicting un-

necessary pain. All rubber drainage tubes should be entirely discarded from surgery, as they are filthy, collapsible, and a source of infection. The carbolic acid need not be feared, as it is absolutely neutralized by the action of the alcohol. Local carbolic poisoning, (and even when the drug is taken internally), is neutralized by the action of the alcohol. Pure carbolic acid applied locally is a specific for superficial erysipelas.

As every surgeon (as well as physician), is interested in the problem of trephining for relief of epilepsy, an article by Dr. David Inglis, of Detroit, (Physician and Surgeon, July), is worthy of extended mention. He records the history of the case of a man, subject for two years to attacks of delirious mania. The question arose as to their origin being epileptic. The fact that about two years previously the patient had been struck on the right side of the head with a log chain and that he still experienced painful sensations at the site of the old wound suggested a psychic epilepsy of traumatic origin. On being sent to a surgeon for trephining, however, the surgeon found himself in the predicament of not knowing where to trephine. The scar of the old log-chain wound was pretty accurately located over the center for the left leg, but patient had never had any sign of either spasm or paresis in left leg; in fact, he had had no evidence of any disturbance of motion, sensation or function anywhere. To trephine over the center for the left leg would have been futile. Inasmuch as the symptoms were psychic only, one might say, "Very well, trephine over the frontal lobes;" but on which side? He being right-handed, it was probable that his left frontal lobe would be the controlling center for his mental processes. So much for the problems to be settled before trephining. It was finally decided not to trephine, partly in consequence of the foregoing considerations, and partly because periodical attacks of migraine were common to his father and sister, as well as to himself, and that the attacks of acute mania always began in like manner with the migraine. From these and other considerations it was decided that these attacks of mania, instead of being epileptic, were manifestations of extreme migraine. The author concludes: "Now comes the instructive feature. The patient has never had his eyes examined, altho he has suffered all his life from migraine, and further states that he is unable to continue reading for any length of time on account of his eyes giving out. The attempt to go on reading makes his eyes and head ache. The case deserves to be considered because there is excellent reason to believe that instead of requiring trephining he has long required proper glasses. I suspect that with proper glasses steadily worn and six months' steady use of a few drops of tincture of cannabis indica three times a day, our patient will find a great change for the better and suspect that an operation for trephining would have cast additional doubt upon an operation which is in proper cases of the greatest value."

A death from the use of Schleich's solution for anesthesia is recorded by Dr. R. M. Stone of Omaha, Neb., (Journal American Medical Association, August 4, 1901). The patient was a young woman twenty-three years of age, fairly robust, well nourisht, with heart-sounds quite clear and distinct and no valvular lesion, who was to be operated upon for recurrent appendicular inflammation, having recently recovered from her second attack. Upon beginning the anesthesia, the Stone mask—a metal mask, rubber tired, with an opening on top of seven-eighths of an inch in diameter—was held two inches from her face, three minutes more being occupied in getting the mask down upon her face. The patient took the solution kindly, and in six minutes had corneal anesthesia, and, in two more, surgical anesthesia. She was then carried into the operating-room and made ready. After about three minutes of preparation, she was relaxt; the pupils were very small; the lower jaw dropt. She barely flincht when the surgeon made the incision, somewhat more when he separated the muscles. Dr. Stone saw this and endeavored to make the anesthesia more profound by dropipng the solution on more rapidly. The reflex due to the incision and separation of the muscles did not cause the pupils to widen at all, for the author was watching them most carefully. It merely caused the patient to move a little. Her face was of good color; her pulse was good. The surgeon had removed the appendix, when the following sequence of events took place: The pulse became weak; then irregular; then intermittent, and finally ceast; the respiration, which had been regular and normal, became very rapid, for six or eight respirations only; while the pulse was failing, but before it had ceast, the pupils, which were still very small, dilated widely and death took place. With the first sign of trouble, Dr. Stone removed the mask; the face was then pallid. The usual measures for restoration were unavailing. Death was due to paralysis of the heart center, followed by paralysis of the respiratory organs.

New York Medical Journal says that Rauch has seen the use of 20-per-cent suppositories of naphthalan followed in ten cases by prompt diminution of the size of piles, as a result of enduring contraction of the blood vessels, mitigation of the pain, and the healing of excoriations and rhagades.

Bulletin of Johns-Hopkins Hospital, Baltimore, gives an account of five cases of aneurism of the aorta treated by the insertion of a permanent wire and the use of galvanism (Moore-Corradi method). It says that a black varnish or lacquer makes the best insulation for the needle. The disposition of the wire in the lumen of the sac is an important factor in the amount and the effectiveness of the fibrin whipt out. A small quantity of wire possessing a good spring should be selected. Cure of the aneurism demands as complete contraction as possible of the sac-wall upon the clot formed at or soon after the operation. The wire should be of such amount and material as not to interfere seriously with this contraction. The corrosion of the wire by the electric current makes a rough surface very conducive to the rapid whipping out of fibrin. Within certain limits, the wire most easily corroded is to be preferred. The sac should never receive both poles, and the negative electrode should never be in the sac. Sepsis is an omnipresent danger. Another danger is that of the development and rupture of a secondary sac due to the rapid filling up of the main sac by coagulum, and the shunting of the blood stream against a portion of the vessel-wall not receiving a special strain before. There have been, in all, twenty-three operations of this character—including the author's five. Clinical and post-mortem evidence points to the efficacy of this method. Thirty-nine per cent of successful results attest the value of this method, and the fact that it is still in its infancy and most crudely applied, makes the record very impressive.

Canada Medical Record says that patients (especially women), with varicose veins often present themselves complaining of a tired, aching, hot feeling in the limbs. This feeling seems aggravated on going to bed, and the legs are moved about from place to place in the hope of finding a cool spot and getting relief. Surgical interference may come to the relief of the patient. Outside of this, very markt benefit may be obtained by careful bandaging with a bandage made of fine flannel. These bandages should be worn night and day, and, if stockings are worn at night and the bandages are properly applied, they will not need renewing for several days. A set of four bandages will last at least six or more months. They require to be dampt and ironed and well rolled, before being applied, after being once on the legs. Patients very soon learn how to properly apply a bandage.

The operation of fixation of an abnormally loose kidney as performed by Dr. Robt. T. Morris, Professor of Surgery in the New York Post-graduate Medical School, consists essentially of the following: A flap of capsule including the larger part of the mesial surface of the kidney is incised with a scalpel and the flap of capsule then stript up from the parenchyma but remaining attacht at the convex border of the kidney. The flap of capsule is drawn thru a slit in the psoas muscle, or in the quadratus muscle, indifferently as one chooses, and is there sutured in place. This brings bare parenchyma also in contact with the psoas or quadratus fascia, where it forms a firm connective tissue attachment. The operation certainly avoids the necessity for passing sutures thru the parenchyma of the kidney and he has had no reports of recurrence of loose kidney up to the present time.

Dr. Eugene Fuller, Professor of Genito-urinary Surgery in the New York Post-graduate Medical School, recently presented to the class a young man who at the early age of 12 years had contracted gonorrhea from his nurse. Tight stricture followed, necessitating internal urethrotomy. Much inflammation ensued, and an indurated area caused the urethra to stand out like a bow on erection. To remedy this the perineum was laid open from just above the rectum on to the uplifted scrotum. The urethra was then cut across very obliquely in the bulbous region. The penile end, in order to facilitate its retraction, was dissected free from the surrounding tissues for three-quarters of an inch, after which the penis was pulled up and bent back over the pubes, thus inducing a maximum separation of the cut urethral ends. The penis remaining in that position, the penile end of the urethral roof was stitcht with fine catgut to its surrounding tissues, while a longitudinal half-inch cut was made along its floor. A perineal vesical drainage-tube was inserted, and the author's usual urethral tube adjusted, the perineal incision being sutured. The penis was kept bent back upon the pubes by plaster. The wound healed well and the operation was a distinct success. Two years afterwards the patient had a good free stream of urination and a penis nearly straight on erection, enabling the sexual act to be accomplisht.

Some readers of this journal will remember a report of cases of acute gonorrheal arthritis treated by incision and drainage, written some three years ago by Dr. John O'Conor, of Buenos Ayres, Argentina. To the Lancet he has lately sent the histories of ten additional cases, stating that since the early part of 1897 he has practist arthrotomy with irrigation and drainage in all cases of this malady which have come to him for treatment; that he cannot too strongly advise this procedure as a means of saving the joint structures from prolonged immersion in a particularly destructive exudate. In not a single instance did sepsis supervene, nor were any relapses noted. The joints after treatment remained normal in contour and function. The course of the cases is fully illustrated by the following report: The patient was admitted to the hospital on March 19, 1897, suffering from chronic gonorrhea with arthritis of the right knee. After a prolonged and useless expectant treatment arthrotomy was performed on June 13. One ounce of turbid serum and a piece of thickened synovial membrane were removed. The patient was discharged cured on July 12.

Welch's method of hand-sterilization consists of the following procedures: (1) The hands and nails are to be thoroly cleansed with hot water and soap. The water is to be as hot as can be borne, and the brush used is to have been sterilized with steam, this preliminary brushing to occupy from three to five minutes. (2) The hands are then rinst in clean warm water. (3) They are then immerst for one or two minutes in a warm saturated solution of potassium permanganate. While in this solution they are rubbed thoroly with a sterilized swab of absorbent cotton. (4) They are then placed in a warm saturated solution of oxalic acid and kept there until completely decolorized. (5) They are then thoroly washt in clean sterilized water or salt solution. (6) Finally, they are immerst for two minutes in 1:500 corrosive sublimate solution, rinst in water and dried in a sterilized towel.

In the treatment of tetanus, Dr. Robt. Abbe, of New York, says that first of all every wound should be thoroly cleansed. The tincture of iodine is excellent for this purpose, a cloth being wet with it. Intracerebral injections of antitoxin have been personally used only in bad cases; in five such cases three patients survived. The method used was that of Kocher; a simple open wound was made by drilling thru the bone with a common hand-drill, and the antitoxin was injected with an ordinary hypodermic syringe. An opening as large as a lead-pencil can be made under cocaine anesthesia; the proper position is half-way between the outer angle of the orbit and a point in the middle of the median line of the skull directly over the auditory meatus. There was no pain or mental change; the pupils, pulse, respirations, and heart were absolutely unchanged. There was no evidence of later trouble, so far as could be determined. In two cases the injections were made twice thru the same wound. In some cases one could not see any striking effects. In some cases there was some decided benefit, even in those that were fatal. In one case of puerperal tetanus the woman was in an exceedingly bad condition; intracerebral injection by Kocher's method was performed, and the patient went thirty-six hours without spasms, but she ultimately died.

Tendon transplantation for the cure of paralyses of the hand has of late been attracting considerable attention. Thus Townsend recently reported three cases from his own practice and several from the practice of others in which markt improvement followed tendon transplantation. Drop-wrist following cerebrospinal meningitis especially can be greatly relieved by this operation. To secure the best result it is necessary to make a careful examination, first, to determine what muscles are paralyzed and what are not. The principle is to suture non-paralyzed tendons to the paralyzed ones. Their direction may be changed, and in this way a normal flexor may be made to do the work of a paralyzed extensor. Careful after treatment is, however, necessary as the muscles must be educated to their new work. The question of the future action of the muscle (that is, so far as the cerebral action is concerned) is an interesting one, and will be solved undoubtedly by the neurologist or physiologist. The practical point is that the flexor tendon being attacht to the extensors, when the patient wishes to extend the hand, the cases already operated upon show that the proper motion results, altho the extension is accomplisht by contraction of the flexor muscles.

Dr. E. H. Janeway, of New York, enumerating the conditions which may be mistaken for appendicitis, directs especial attention to neuralgia in that region, to renal colic, particularly when protracted and febrile; to cholecystitis, and to perforation of duodenal or other ulcers of the gastro-intestinal canal. He has seen a case of carcinoma diagnosed appendicitis and operation arranged; the patient died before operation. He has noted a similar blunder in several cases of renal colic. Typhoid fever is not unlikely to resemble appendicitis, and tonsillitis, with severe pains in the iliac region, has been called appendicitis. Diseases of the internal genitalia may also simulate the disease.

Jacobson has been experimenting on dogs concerning the possibility of removing large portions of the lung without causing serious injury. Journal of American Medical Association states that seven dogs were operated upon, in six of which there was total resection of the right lung and in one the removal of the upper two lobes. Of the total resections, 3 died and 3 lived; in one of the cases was the death directly due to the operation. The experiments prove that the removal of the entire right lung is possible, and that one lung is sufficient to carry on life in comfort. The dangers of operation are two, pneumothorax and secondary hemorrhage. The best method of combating the former seems to be by the use of the Fels-O'Dwyer apparatus for artificial respiration during the operation. The complication of secondary hemorrhage presents difficulties which are not so serious and the author thinks that the use of the angiotribe as suggested by Murphy would be of decided advantage.

Burns should be divided into two degrees of severity, says Dr. Frederick Griffith of Philadelphia, (Journal of American Medical Association, September 7, 1901), the first class involving burns of the skin only and the second including all others. The pathology of these is that of inflammation of the part locally affected. Early death and internal complications are due to direct action of heat, with fragmentation and vital change in the blood corpuscles; later effects are due to infections taking place from the burned area. The granulations during the healing of burns are the determining factor in the amount of contraction and deformity. The greater the friction caused by irritation of any source, the larger the granulations, the greater the amount of connective tissue and contraction. The local treatment from earliest times has been along the lines of prevention of irritation, but the late advances in wound treatment have not been followed. The burned wound should be cleansed with the removal of as much burned, dead tissue as possible; the thoroness with which this is done will determine the presence or absence of infection. Hydrogen dioxide to wash away the debris and render aseptic the denuded parts, is the best antiseptic at our command. Rubber tissue in strips should be laid on the wound to prevent contact with absorbent dressing. The use of splints to secure relaxation and retention in obtaining rest for a burned part is of great importance, and is as much indicated in this form of injury as in fractures. The internal treatment is stimulative until reaction from shock has taken place, when it becomes supportive. Opium fills the indications for pain, internal inflammation, and diarrhea. The bowels and kidneys should be continually kept open, but enemas only should be employed. Watchful attention must be given to early signs of internal complications of viscera.

Discussing the subject of internal medication of cystitis, Dr. Burnside Foster (St. Paul Medical Journal), in a recent paper before the Ramsy County Medical Society, said that when the urine is already alkaline, either ammoniacal from decomposition or because of the presence in it of a fixt alkali, the administration of alkalies will make matters worse. When, however, the urine is highly acid, alkalies are indicated, of which the most useful is liquor potassae. It may be administered well diluted and mixt with a little mucilage. A convenient formula is:

Liquor potassae	8
Mucilage of acacia	32
Tincture of hyoscyamus to	128

Mix. Direct: Oone teaspoonful every four hours. If the urine is already alkaline, and particularly if it is ammoniacal, we should prescribe urinary antiseptics, as salol, boric acid or benzoate of sodium. Perhaps the most reliable urinary antiseptic at our disposal is urotropin, and in cases of bacteriuria and in some cases of ammoniacal decomposition of the urine its action is rapid and certain.

A case of cyst of the epiglottis is recorded in New York Medical Journal, August 25, by Dr. W. L. Ballard, of Columbus, Ga. The patient was a lawyer, 52 years old, married, who complained of something "sticking" him in the throat, with a tendency to clear the throat of mucus or some foreign body. There was not much soreness, but there was a feeling of fatigue attending the effort of articulation while he was arguing cases. Laryngoscopic examination revealed a cystic growth on the anterior surface of the epiglottis, of the size of a small filbert, with a broad base. The growth was incised and a gelatinous substance was discharged from it. A solution of silver nitrate, sixty grains to the ounce,

was applied to the wrinkled mucous membrane of the emptied sac, also, thru the incision, to the interior of the sac. In three days there was no sign of the tumor, save that a little thickness of mucous membrane could be seen. About this time the patient had occasion to visit Baltimore for a ten days' sojourn, and during this time had a physician see and treat his throat daily. Two weeks' after the patient's return home he called to see Dr. Ballard, and on examination the growth was as plainly visible as ever. He again incised the growth, letting out the semi-fluid, and a probe coated with chromic acid heated over a gas flame to solidity was introduced thru the incision and the sac curetted, so to speak, with the result that up to this date—five months—there is not the least evidence of its return. Such cases are of exceeding rarity.

A question of much interest to every general practitioner is answered thoroly by Dr. Maurice H. Richardson, Professor of Clinical Surgery in Harvard Medical School, Boston, in Providence Medical Journal, April, 1901, viz.: How may typhoid fever be differentiated from appendicitis? The following points are of interest: (1) In rare instances an appendicitis in which the abdominal symptoms are mild simulates a typhoid in which they are pronounced; (2) the symptoms which should put the surgeon on his guard against typhoid are in the order of their importance; (a) pain without rigidity; (b) pain and tenderness without rigidity; (c) pain and tenderness without rigidity, without tumor; (d) a history of malaise, headaches, slight fever preceding the pain, even if of only 24 hours' duration; (e) an initial and sustained temperature of 103 degrees or more preceding the pain; (f) increast area of splenic dullness when other symptoms suggest equally appendicitis and typhoid fever; (g) rose-spots; (h) normal leukocyte count; (3) sometimes the diagnosis cannot be made; (4) the surgeon should wait when from the absence of rigidity and tumor typhoid is suspected, (especially if the patient is near at hand), as 24 hours will usually be time enough to establish the diagnosis of appendicitis or to rule it out; many days may be necessary to recognize positively typhoid fever; (5) the dangers of exploration in the initial days of typhoid are probably slight, if the wound pursues an aseptic course; (6) the most experienced and careful diagnostician may be misled by the prominence of abdominal symptoms in typhoid into advising operation; (7) when the abdomen has been opened the appendix should be removed even if not diseased; if mesenteric glands easy of access are present, they should also be removed; (8) even with the abdomen opened, there is no positive way of recognizing typhoid in the first days. When glands are removed which present the features of typhoidal glands, a rapid convalescence of the patient throws some doubt upon the diagnosis, especially when no typhoid bacilli are found in the glands, and the cultures from blood serum are sterile.

In a late article on appendicitis, Dr. Joseph Eastman, of Indianapolis (Medical and Surgical Monitor), discusses the cause, pathology, termination, diagnosis and progress of appendicitis. He finds no two cases entirely alike. The appendix is a sort of catch-basin for all kinds of bacteria, and is not freely drained as are other parts of the intestinal tract; it is, therefore, especially liable to infection and disease. As regards diagnosis, the diagnostic tripod is pain and tenderness with rigidity of the abdominal muscles in the right iliac fossa, with a tendency to obstruction of the bowels; added to this in at least 75 per cent of cases is the history of similar attacks. The pain is nearly always reflected above the umbilicus, to the superior mesenteric or solar plexuses of nerves. Patients and physicians are sometimes deceived because the initial pain is not in the region of the cecum. Two cases are reported and operations described. Eastman insists on the vital importance of operating on the patient during convalescence from the first attack, after the bowels have been freely evacuated, the kidneys have rallied from the congestion and the secretory functions are re-establisht. The prognosis in appendicitis, he says, will be governed by when, where, and by whom the operation is performed. He emphatically negatives the advice to operate as soon as the diagnosis is made, and insists on considering the three following points well: 1, when to operate, considering the stage of the disease; 2, that a more expert operator, with a larger experience, might be secured later; 3, the patient could possibly be removed to a special hospital. Again, operating when there is blood-serum about the appendix may necessitate a drainage-tube and cause a hernia, which can be avoided by operating in the interval. When called to an acute attack, he urges non-use of the hypodermic with morphine. He believes that a special institution constructed and equipt for abdominal surgery has given and will continue to give the best results.

GYNECOLOGICAL NOTES.

As has often been pointed out by this journal the term "puerperal sepsis" is no longer sufficiently accurate to describe the various infections which may follow confinement. It is especially important that saprophytic (i. e., putrefactive—characterized by stinking discharge and excessive fever), should be differentiated from streptococcic and straphyllococcic infection. Dr. E. H. Grandin, of New York says, (American Journal of Obstetrics, April), that the woman should be subjected to a most thoro physictl examination, preferably under anesthesia, for the differentiation between saprophytic and streptococcic infection. Sapremia (saprophytic infection) yields to local operative measures (curettage), except where expectancy has ruled or streptococcic infection has been superadded. In such an event a major operation may be necessary, usually at a remote period from the initial infection. If the clinical symptoms are low, especially where the pulse is rapid in proportion to the temperature, a warning of general systemic infection, sapremia having been ruled out, tho no focus of infection in the pelvis can be detected, and other sources of systemic disturbance being excluded, an exploratory abdominal section is indicated for an absolute diagnosis. Early removal of the uterus and appendages before there is general systemic infection is advisable in many cases of known streptococcic infection.

In the last article he ever wrote, the late Dr. A. J. C. Skene, of Brooklyn, made an earnest plea for more careful attention to cleanliness in minor gynecology. He tells of a certain gynecologist doing a large office practice, who had a number of cases of vaginitis which started up in patients under treatment. On close questioning it was found that his tampon material was absorbent cotton done up in the usual way, and while being used it was kept in a drawer of the operating table.. Acting on a suggestion that it became infected therein, he used only sterilized cotton and had no further trouble in that regard. Other cases are related showing the evil effects of unclean instruments or dressings in the local treatment of uterine disease. Skene recommends the rubber gloves for digital examinations, and they are to be sterilized after each time that they are used. For instruments he prefers the formaldehyde sterilizer, and for cotton, gauze, pessaries and towels he uses the steam. In closing he calls attention to the danger of handling dirty money. Some of us are inclined to joke on this subject, but the danger is unquestionable, especially in a large office practice where patients are treated in rapid succession; the possibility of getting gonorrheal opthalmia, for example, from handling infected silver, is not a small one.

It is well to bear in mind that a purely functional cardio-vascular neurosis may appear at the menopause in certain women. This neurosis is very dangerous when organic disease of the heart already exists, being one of the most frequent causes of asystolism. Patients with arterio-sclerosis without valvular lesions resist best the unfavorable influence of the menopause, when arotic insufficiency is aggravated. The same ill-effect is seen in mitral disease. Dilatation of the chambers or of the aorta, tachycardia, and irregular pulse, have been noted in these patients, but not in any direct proportion to the degree of arterial sclerosis present. The cardiac symptoms of the menopause come "in fits" between the periods, and are usually improved by the appearance of flow. They are, like all other phenomena of the menopause, aggravated by overwork, violent emotion and all debilitating influences.

In an article in Annals of Gynecology, Dr. D. C. Brockman, of Ottumwa, Iowa, reports four cases of oophorectomy for nervous diseases that seemed to depend upon the menstrual function. Case 1, was that of a married woman. Menstruation was regular, but accompanied by severe pain and hysterical convulsions with one or two days of well markt hysterial mania. Operation, a double oophorectomy. Relieved. Case 2 was unmarried, had an epileptic attack with the second menstrual period. Epileptic attacks increast in frequency and severity for five years, being most severe just before and during each menstrual period. Operation, double salpingo-oophorectomy, each tube removed close to uterine cornu. Improved, tho not cured. Case 3 had epileptic attacks with her periods. A period of amenorrhea for eight months, no attacks, but they returned with menstruation. Operated. Not greatly improved. Case 4 was married. Mania with each period, often violent. Operation, removal of apparently healthy tubes and ovaries with suspension of uterus. She was greatly improved. The results in these cases are not perfect, and three of them have been operated within three years, so

that it is too early to say what the ultimate results will be. He concludes that it is only by patient, painstaking work along this line with honest reports made three or four years after the operations that we will learn on what cases to operate and what not, but one thing is certain, no more pitiable cases come to our rooms than women suffering from the gross functional nervous diseases, and none deserving of more careful, scientific, conscientious study than they, and the doctor will not have lived in vain who succeeds in curing even a few of these poor unfortunates.

A rather remarkable conditions of affairs was recently found in the abdomen of a woman by Drs. William Gardner and J. G. Adami, of Montreal. The patient was a woman of 35 years, operated upon about fourteen months after her last pregnancy for a slow-growing fluctuating abdominal tumor. Two tumors were found, the larger, abdominal in position, giving a sensation as of fluctuation; the smaller, pelvic, much firmer. Both were obviously subperitoneal. These tumors were enucleated thru an incision in the peritoneum to the outer and left side. There was but little difficulty or hemorrhage. Recovery was uneventful. On examination the larger tumor seemed to have originated as a fatty tumor which had assumed a myxomatous or mucinous change, while the other tumor, developt apparently from the same tissue, had remained more fibroid.. The names under which these two cases are reported are more formidable than the operation: Retroperitoneal lipoma (lipoma myxomatoides) with accompanying retroperitoneal fibroma (Chondro-myxo-fibroma)!

Eighty-five cases of diseased uterine appendages were analyzed by Dr. W. L. Burrage (Annals of Gynecology), with reference to conservative operation; with the following conclusions: (1.) It is advisable to do conservative operations in all cases where the ovaries and tubes are not hopelessly diseased in all parts of their structure, except on patients who are near the menopause, on patients who have pronounced gonorrhea of long standing, and on the rare cases of malignant disease. (2.) When a patient is near the menopause (over thirty-five years of age) and has ovarian or tubal disease of any considerable degree of severity, it is generally wiser to perform complete removal with or without hysterectomy, according as the uterus also is diseased or not. (3.) In all cases of well-markt gonorrhea of long standing, especially if the patient is constantly exposed to infection, if both tubes are seriously diseased and closed, total removal with or without hysterectomy is the operation of choice. (4.) In certain cases of this class where the patient thoroly understands the likelihood that another operation may be necessary at some future time and wishes to take the chances in the hope of preserving the function of menstruation, conservative operation is permissible. (5.) If one tube is patent and healthy in appearance and there is enough healthy ovarian tissue to preserve, a conservative operation ought to be performed even in the presence of gonorrhea. (6.) With present methods of performing resection of the tubes, if both tubes are found closed at the time of operation, subsequent pregnancy is not to be expected. (7.) In severe grades of inflammation of the appendages irrespective of causation, if the ostium abdominale of one tube is patent, the prospect of subsequent pregnancy after the preservation of a portion of ovary is about one in four and a quarter, or 23½ per cent. (8.) In the less severe grades of inflammation under similar conditions of tube and ovary the prospect of subsequent pregnancy is about one in two and a quarter, or 44 per cent. (9.) In women who have borne children, in both classes, subsequent pregnancy may be expected in 35 per cent, whereas in previously sterile women it may be lookt for in only 5 per cent. (10.) If it is necessary to remove both ovaries it is of no advantage to preserve any portion of tubal tissue, but, except under the conditions just enumerated, some ovarian tissue should be preserved in every case.

In an article on cancer of the cervix complicating pregnancy, Dr. Geo. Ben Johnson, of Richmond, Va., divides cases into three groups, each having its own indication for treatment. (1.) Those cases in which the cancer appears before the termination of the fourth month of pregnancy and remains limited to the cervix. (2.) Where the disease is discovered after the fourth month and remains limited to the cervix. (3.) Where regardless of the stage of pregnancy, the disease has extended to the vagina, and possibly neighboring structures, rendering the condition inoperable. In the first and third groups the indications for treatment are apparent, positive and constant. While in the second group the method of procedure will vary. In the first group of cases we cannot consider the life of the child and the case must be treated as tho the woman was not pregnant; that is by hysterectomy. In the second group if the disease is progressing slowly we should endeavor to save both mother and child by waiting until the time of probable viability then Cesarean section and complete hysterectomy. But the case must be closely watcht, and if the cancer is developing at all rapidly, we must sacrifice the child in the interest of the mother. In the third group we can only hope to save the child, and the mother should be supported until term and the child delivered by Cesarean section. He reports two cases in the first group and one in the second, all making good recoveries after operating.

Charlotte Medical Journal gives a synopsis of a report of two cases of pernicious vomiting, caused respectively by ectopic gestation and syncytial tumors; made by Dr. E. P. Davis, of Philadelphia. In the first case there was an ectopic pregnancy followed by rupture, and removal by section, the patient recovering. In the second case the uterus was emptied of an early ovum and membranes by the curet. Nausea was only temporarily relieved. She did not regain strength, vomiting returned, with mania at times, involuntary evacuation of feces and urine, and death from apparent exhaustion. Consciousness was retained until just before death, pupils unaltered and intense headache was her one complaint. Autopsy showed a number of small tumors in the brain and a large tumor of the left kidney. The primary tumor was evidently that of the kidney, and emboli were carried by the blood current to the brain. The tumors found in the brain were principally blood with the syncytial masses in the center entirely unconnected with the surrounding nerve substance. This is, perhaps, the first reported case of pernicious nausea in which syncytial growth was a factor.

Some women with fibroids will not submit to operation; others cannot; still others do not need operation. What can be done for such cases? Dr. A. H. Goelet, of New York, answers this question in an article in Philadelphia Medical Journal, April 20, 1901, in which he says that his more recent observations have led him to conclude that interstitial fibroids of moderate size do sometimes disappear under the influence of electricity, aided by certain internal remedies. During the past year the author has observed such tumors almost wholly disappear in three cases, and many others have diminisht very much in size. He says that two years ago he was lead to make the statement that he had never seen a fibroid removed by electricity except where the electricity had caused sloughing and a discharge of the mass thru the cervix. But recent observations have compelled him to change his views, and now that the limitations of electricity have come to be better understood, and by restricting its use to those cases where it has been observed to yield results, and operating, where permissible, in those cases where it could not be expected to accomplish anything, there are now fewer failures and consequently more satisfaction in dealing with these cases. He further says that ergot administered internally is certainly a valuable auxiliary to electricity in some instances. It acts by stimulating contraction of the muscular structure of the uterus and by compression of the blood-vessels, diminishing the supply of blood to the growth. It also has a controlling influence upon bleeding from the endometrium, which is sometimes an annoying symptom. In two instances at least he has known its influence combined with that of galvanic applications to the interior of the uterus to cause a breaking down of the intervening wall with sloughing of a large interstitial fibroid, which was subsequently delivered successfully thru the uterus. The combination of liquor sedans with ergot acts well in painful conditions. He also says that iodide and bromide of potassium are useful sedatives in these conditions, and are certainly a material aid in some cases.

Dr. W. S. Christopher, of Chicago, who has made the subject of physical development of girls an especial study, says (Journal of the American Medical Association, September 14, 1901) there is an exaltation of life processes at the pubertal period which finds its expression not only in an increast rate of growth, but also in the development of physical power. This exaltation is preceded by a period of relative quiescence. In the sexes this exaltation differs in that it commences earlier and has a shorter duration in girls than in boys; moreover, it is more markt in girls than in boys in weight and stature, but less in measurements involving physical power. Puberty is also a period of great individualization, as indicated by the great normal range of physical measurements at this period. The range of physical measurements at all ages in childhood, including puberty, is distributed uniformly above and below the line of average measurement. At puberty mortality is low and morbidity is high. Neuroses, psychoses, neurasthenias, cardiopathies, deformities, and anemias are the principal morbid manifestations of the physical, intellectual, and emotional turmoil which characterize puberty. The great range at puberty of the measurements of the physical features of the child expresses the condition which

permits the existence in individual children of unusual lack of balance in physical measurements, or maladjustment of physical features. Unbalanced physical development is an important factor in the production of morbid manifestations. It is operative thruout the development period of life. It occurs with greatest frequency at puberty, and it there finds its most markt expressions. It is found associated, in a casual relation, with most of the morbid manifestations of puberty, particularly disturbed heart action, dilatation of the heart, fatigue, anemia, and some deformities, such as round shoulders and scoliosis, as well as many of the neuroses of the period.

Sinclair, from an experience covering ten Cesarean sections, draws a number of conclusions—especially important being the one that we should not now, as in former days, use it as a last resort. In all his cases incision of the uterus was postponed until it could be drawn forward out of the abdominal wound, and from his experience it is always best to insert an elastic tube so as to compress the uterine vessels in cases of emergency. It does not necessarily require any very large abdominal incision for, in the majority of cases, after rupture of the membranes, the volume of the uterus is not so great and the advantages of cleanliness and precision in the operation, by drawing up the uterus, are beyond question. The objection to elastic ligation has no basis. If the deep sutures are inserted as quickly as possible, tied tightly and the tube relaxt, hemorrhage is slight and the organ gradually assumes its natural color. If by the time the sutures are inserted and tied it looks bulky, it can usually be made to contract by manipulation, not directly with the hands, but thru a suitable piece of gauze. The size of the incision into the uterus should be sufficient to permit rapid extraction of the fetus without further laceration, a one-half inch more of incision being a small matter as compared to the accident of tearing the uterine substance. Sinclair rejects the German method of incising the fundus, which he thinks in any case should be left free. When the cut is made in the most obvious position (the middle third in front and in the median line), it sinks down and comes in contact and adheres to the abdominal wound. A month or six weeks later the uterus is found exactly where it would be after a successful ventrofixation operation. Symphysiotomy, he believes, is dying out and getting to be obsolete, which he thinks is the better for humanity. As regards premature labor, it would be just as well to perform craniotomy as to wait until the twenty-eighth or thirtieth week when a viable child can not pass. If we look at the indications for Cesarean section, and compare them with those for the induction of premature labor, one cannot fail to be impresst with the shortening of the one and the extension of the other.

Fifty-four cases of suturing the round ligaments to the vaginal vault for the cure of retrodisplacements of the uterus are reported in American Journal of Obstretics by Vineberg. His results have been very satisfactory, there being no deaths, the pathological conditions were relieved, all symptoms disappeared, and there was no interference with labor in the cases going to term. The indications for this operation are as follows: (1.) In all cases of mobile retroversions and flexions of the uterus in which a surgical procedure, for one reason or another, may be deemed necessary. (2.) In the same conditions when they are associated with prolapsus uteri of the first and second degrees. (3.) In all cases of adherent retroversions and flexions in which the uterus only is adherent. (4.) In cases of retroversions and flexions associated with moderate disease of the adnexa, such as cystic ovaries, catarrhal salpingitis, hydrosalpinx and hematosalpinx and pyosalpinx, when the latter is of moderate size and not too firmly and extensively adherent. (5.) It is the operation of predilection in women with thin, lax abdominal walls which would offer a poor support for the uterus. The same applies to the extreme opposite condition, i. e., in women with very fat abdominal walls in whom a supra-pubic operation constitutes a very serious affair. It is contraindicated in the following conditions: (1.) In congenital retroversions. (2.) In retroversions and flexions when the broad ligaments are very much infiltrated and shortened by inflammatory disease. (3.) In retroversions and flexions associated with very markt and extensive disease of the adnexa, and also when the adnexa are less diseased but are very firmly and extensively adherent. (4.) In complete procidentia where there is a veritable hernia of all the pelvic organs. (5.) In some rare cases of nullipare in which the vagina is very deep and narrow. (6.) In cases in which, in addition to the pelvic lesions, there are evidences of disease higher up in the abdominal cavity, as, for instance, chronic appendicitis.

LITERARY NOTES.

W. B. Saunders & Co. of Philadelphia, have recently issued a "Dose-Book and Manual of Prescription-Writing;" with a list of official drugs and preparations, and the more important newer remedies; by E. Q. Thornton, M. D., Demonstrator of Therapeutics, Jefferson Medical College, Philadelphia. Second Edition, Revised and Enlarged. Octova, 362 pages, illustrated. Bound in flexible leather, $2 net. This work is intended for the student of medicine both during his years of study as an undergraduate and in the early period of his professional career. The volume will also prove of value to the practitioner of many years' standing for reference. In the revision additions have been made to the chapters on "Prescription-Writing" and "Incompatibilities," and references have been introduced in the text to the newer curative sera, organic extracts, synthetic compounds, and vegetable drugs. To the Appendix, chapters upon Synonyms and Poisons and their antidotes have been added. As in the former edition, this volume will be a valuable work of reference for the practitioner, full of practical suggestions. To the student such a book is indispensable. It may be purchased thru Lewis S. Matthews & Co., of St. Louis.

P. Blakiston's Son & Co. of Philadelphia, have printed a Compend of Human Physiology, by Dr. Albert P. Brubaker, Assistant Professor of Physiology in Jefferson Medical College. The tenth edition has been thoroly revised and enlarged to 270 pages. It sells for 80 cents.

"A Laboratory Course in Bacteriology." For the use of Medical, Agricultural and Industrial Students. By Frederic P. Gorham, A. M., Professor of Biology, Brown University, Bacteriologist to the Health Department, Providence, R. I. 12 mo. vol. of 198 pp., with 97 illustrations. Philadelphia and London; W. B. Saunders & Co., 1901. Cloth, $1.25 net. Bacteriology is essentially a laboratory study. It is only by actual laboratory work that it can be taught in such a manner as to serve any useful purpose. It is also a subject of very general scientific interest. Courses in bacteriology are no longer confined to the medical school, but are being introduced into colleges and agricultural and industrial schools. This volume has been prepared as a guide to the practical details of laboratory work. It is intended to present the subject in such a general way as to lay a broad foundation for later specialization in any branch of bacteriology. By a judicious selection the course can be made to conform to the requirements of medical, agricultural or industrial students. This little text-book will serve admirably for each of these classes.

"The Diseases of the Respiratory Organs, Acute and Chronic.", By William F. Waugh, A. M., M. D., Professor of Practice and Clinical Medicine, Illinois Medical College, etc. Pages 221. Price $1 net. G. P. Engelhard & Co., Chicago, 1901. This is a very valuable little book from the pen of one of America's best teachers and practitioners. Especially excellent are the suggestions as to therapeutic management; and in the department of therapeutics it must be admitted that Waugh is a "past master." It is to be regretted that it is all too brief on some topics; but its general excellence makes up for the deficiencies—and everything pertaining to diseases of the respiratory tract cannot be expected in a book of only 221 pages.

"Surgical Experiences in South Africa, 1899-1900." Being mainly a clinical study of the nature and effects of injuries produced by bullets of small calibre. By George Henry Makins, F. R. C. S., Surgeon to St. Thomas' Hospital, London; late one of the Consulting Surgeons to the South African Field Force, etc. 25 plates and 96 illustrations in the text. Philadelphia, P. Blakiston's Son & Co. Octavo; 500 pages. Price, cloth, $4 net. This is an intensely interesting volume, interesting not only for its valuable remarks on surgical topics, but because of the sidelights it throws upon the war in South Africa in general; and especially on the direct effects of modern fire-arms. After introductory remarks and a consideration of modern military rifles and their action, the author takes up (1) the general character of wounds inflicted by bullets of small calibre, (2) injuries of blood vessels, (3) bones of the limbs, (4) joints, (5) head and neck, (6) vertebral column and spinal cord, (7) peripheral nerves, (6) chest, (7) abdomen, and (8) general character of shell-wounds. This is a volume that will be consulted in decades yet to come by surgeons who want an account of surgical methods in vogue at the beginning of the twentieth century. It will be a classic.